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NEWS LETTER

.. AIR CORPS TRAINING CENTER NUMBER ..

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AIR CORPS TRAINING CENTER NUMBER

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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE AIR CORPS TRAINING CENTER

By Brigadier General James E. Chaney, Air Corps

TO be effective, an Air Corps must have a large number of young combat pilots. The relative proportion of lieutenants to officers of higher grade in the Air Corps is approximately double that of any other arm. Therefore, to maintain the youth of the fighting squadrons, it is necessary to rotate young graduates of the Training Center through the combat squadrons and then return the bulk of them to civil life. This secures at the same time a pool of young trained military pilots in the Air Corps Reserve for immediate replacements in a major emergency.

The mission of the Air Corps Training Center is to turn out young military pilots competent to undertake the duties of a second lieutenant in a tactical squadron. It consists of the Primary Flying School located at Randolph Field, the Advanced Flying School located at Kelly Field, and the School of Aviation Medicine at Randolph Field. The course of instruction is one year, with eight months spent at the Primary School and four months at the Advanced School.

There are always three classes in the Training Center, two at the Primary School and one at the Advanced School, a new class entering every four months. At the Primary School the student spends four months on the Primary Stage and four months on the Basic Stage. The instruction on the Primary Stage is given on a training type airplane, known as the PT, and consists of dual instruction, the fundamental flying maneuvers, accuracy work and acrobatics.

On the Basic Stage, the student advances to a larger, more powerful and speedier type of airplane known as the BT type. In this plane, and with expert instructors, he now reviews all of the work done on the Primary Stage, but in a ship with different flying qualities and which more nearly approach those of tactical squadrons. At this stage, he also gets formation flying, strange field landings, instrument flying under the hood, and day and night navigation flights. The objects sought so far have been perfection in flying technique and the development of headwork.

The third quarter of the student's scholastic year is spent at the Advanced Flying School where he specializes in either Pursuit, Bombardment, Attack or Observation aviation, using service type equipment. In addition to intensive flying training in his own specialty, he is given also considerable experience in day and night navigation, instrument flying, and transition to all types of military airplanes available at the Advanced Flying School.

A student can absorb only a limited amount of flying instruction each day, especially during the first few months of the course. Therefore, from the very beginning of the course, ground instruction goes hand in hand with flying instruction. The main subjects taught are Airplane Engines, Theory of Flight, Radio Code, Ground Gunnery, Air Navigation, Meteorology, Airplane Maintenance, Military Law, Maps, Customs of the Service, and Military Drills, with a continued indoctrination of the fundamentals of military service and discipline. At the Advanced Flying School, while each student specializes in flying the tactical formations and in carrying out the tactical missions of one specialty only, all are given theoretical instruction in Pursuit, Bombardment, Attack and Observation aviation.

The student body is made up of Flying Cadets and student officers. Each new class consists of approximately one hundred and fifty men. The class beginning in October of each year usually is composed of from fifty to eighty second lieutenants from the graduating class at West Point. The Flying Cadets in this class therefore are reduced to such number as to make a total for the class of approximately one hundred and fifty. The Flying Cadets, with the exception of a few ex-enlisted men from the Army, are drawn entirely from civil life. They are selected from candidates between the ages of twenty-one and twenty-seven years who have successfully completed at least two years in a college or university and who are in excellent physical condition. College graduates, however, receive priority in the selection of students.

Upon graduation from the Training Center the Flying Cadet is assigned to a tactical squadron at one of the Air Corps stations in the United States for an additional year, upon completion of which he is commissioned a second lieutenant in the Air Corps Reserve and serves an additional year with a tactical unit as a second lieutenant. The young officer graduate from the Training Center is also assigned immediately to a tactical unit in the Air Corps. Upon completion of his active duty as a second lieutenant, the young Reserve officer returns to civil life, retaining his status as an Air Corps Reserve officer. He is eligible to take examinations for a commission in the Regular Army when and if vacancies exist, and can affiliate himself with local Reserve or National Guard units, thus maintaining his flying experience, and his military contacts and associations.

In the period of one year at the Training Center the young student receives a total of 323 hours' flying instruction. As a result of this intensive instruction carried on almost continually throughout the year at the Training Center, the students and regular personnel thereat put in a tremendous number of flying hours per year. For the fiscal year 1935 this flying for the Training Center, computed in airplane flying time, amounted to 113,802.8 airplane hours. The flying time for the remainder of the Regular Army for the same period was 312,575.4 hours, that of the National Guard 40,606.7 hours and that of the Organized Reserves 23,204.8 hours.

The main object of the School of Aviation Medicine is to train medical officers of the Regular Army, National Guard and Organized Reserves in the duties of the flight surgeon. In addition, it carries out research work in aviation medicine and conducts physical examinations for flying. The basic course is of four months' duration, with two classes per year. The Training Center, with its large student body and Air Corps officer personnel, is an ideal location for the School of Aviation Medicine. The study of the pilot is still the greatest problem for flight surgeons, and conclusions about personnel, to have any degree of accuracy or value, must involve the study of large numbers. Furthermore, flight surgeons throughout the United States are largely responsible for the selection of trainees. A student flight surgeon, as a result of his intimate contact at the Training Center with the flying training instructors, trainees, and trainees who fail, obtains a firsthand conception of the type of Flying Cadet desired by the Air Corps.

About 45% of the students entering the Primary Flying School successfully complete the course and graduate from the Training Center. Most of the failures are due to unsatisfactory progress in flying. Therefore, the fact that a candidate has passed the rigid physical and the educational requirements does not insure his graduation. This indicates that there are other factors that make up the potential military airplane pilot that are not being given consideration in the selection of students. Just what all these factors are is problematical. However, the Training Center, and especially the School of Aviation Medicine, are studying this problem and with very promising and positive results. Success in being able to determine readily those possessing sufficient aptitude or other essential qualities for rapid progress in military flying would be of the greatest value in a national emergency. Enormous savings would be made in airplanes, instructors, human lives, and time. During the last war, in the Air Services throughout the world, there were few eliminations; the student either completed the course or was killed.

The Training Center appreciates the fact that many of those who are eliminated in its course of flying instruction could be taught to fly under certain conditions, but based on experience of the past, feel that they do not possess those qualities necessary in developing a military fighting team in the air. With a limited number of military pilots authorized for the Air Corps, it is essential to retain only those students who have sufficient aptitude to progress fairly rapidly and safely to a high standard of performance in military flying and combat teamwork that are so necessary in the face of an enemy in active operations.

The problem of the Air Corps in this respect may be compared somewhat to that of developing a big league baseball team where the number of players is limited. The recruits for these teams are carefully studied and selected from those who have demonstrated that, in addition to being physically fit and able to play an excellent game, they possess certain qualities that can be developed to a much higher standard of performance in teamwork than they have so far exhibited.

The trend of military airplane development definitely points to the use of multi-engine airplanes of greater size, greater speed, and greater cruising range. The operation and maintenance of the modern military airplane with its radio equipment, blind landing equipment, supercharged engines, controllable pitch propellers, together with other instruments and equipment, clearly indicate more air space, more ground space, more hangar space, more shop space, and the extension of all ground and air courses now being given at Randolph and Kelly Fields as soon as modern equipment becomes available.

With the War Department's approval of the 2320 airplane program as recommended by the War Department Special Committee, headed by the Hon. Newton D. Baker; with the former Chief of Staff, General MacArthur, recommending that this figure be stepped up to 2500 airplanes; with a present strength of approximately only 1300 airplanes for the entire Air Corps; with an actual shortage in flying personnel to face, which may be critical if not foreseen and synchronized with an improvement in the airplane situation; with England, France, Japan, Italy and Germany entering upon greatly expanding programs for their air forces in recognition of the increasing importance of aviation in national defense; with our geographical isolation fast becoming a thing of the past; with the fairly safe and reasonable assumption that our military aviation will continue to expand in years to come, the Air Corps Training Center undoubtedly has before it a formidable task in maintaining the youth of the combat squadrons of our Regular Army and National Guard, and a pool of Reserves for immediate service in a national emergency.

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JAPANESE GOOD-WILL FLIGHT TO MANILA

From Clark Field, P.I., comes the brief item that Major C.W. Ford and Capt. Thomas W. Steed, Air Corps, intercepted the Japanese good-will plane off the west coast of Luzon on its recent Japan-Philippine flight and escorted it to Manila.

In connection with this flight, the Manila TRIBUNE of November 17th has the following to say:

"Unannounced, unpreceded by the usual series of press agent Hullabaloo, the *Dai-Mai*, Japanese goodwill plane representing the *Osaka Mainichi* and the *Tokyo Nichi-Nichi*, came whirring last Tuesday over Manila's airdrome at Grace Park and finally glided smoothly down the landing field. In no time at all, the crew composed of a young Japanese newspaperman, Fukuwichi Fukumoto, one pilot and one mechanic, were surrounded by a welcoming group - Japanese officials and businessmen, the city mayor and girls in Balintawak with boquets to offer, a brass band, and children waving the Japanese, American and Filipino flags.

Unostentatiously the party took off cheered by thousands at the military airdrome at Tokyo last Monday morning, and without much ado covered 3,820 miles.

Said Mr. Fukumoto in English with hardly any accent, "There is nothing official in this flight we have just made. This much I can tell you: the rank and file of Japanese millions consider the *Dai-Mai's* recent transoceanic flight as the harbinger of something significant for your country and mine.'

In the words of a local commentator, 'The goodwill flight of the *Dai-Mai* is another notable instance of Japanese initiative. While ordinarily the Island-Empire would have sent a diplomat plenipotentiary, this time it has picked on a newspaperman to perform the task of a goodwill missioner. Which is a novel way of playing diplomatic overtures.'

Mr. Fukumoto of the *Mainichi* is a typical gentleman of the Nipponese press. He could adequately gauge the pulse of national sentiment in his country. Here is a typical Japanese slant on the current Japanese-Filipino relations in the opinion of Mr. Fukumoto: 'The average Japanese, picked from the ranks of the farmers, the merchants, the soldiers, and the artisans, is still vaguely conscious of cultural, geographic, and racial ties with his neighbor the Filipino. He is moved by the same motives as his neighbor oriental and is interested in what his neighbor thinks and does. Seen from the Japanese angle there is no reason why relations between the Philippines and Japan cannot be made closer than they are now.'

Speaking of the *Dai-Mai* aerial flight, Mr. Fukumoto said: 'When our papers published the Japan-Manila aerial project, doubts were entertained in several quarters. Rival newspapers intimated that nothing would materialize out of the plan. So now, we have not only blazed an air trail in the Orient but also established a landmark in journalism in this part of the world.' Mr. Fukumoto also hinted on the current journalistic boom in Japan. 'The newspaper in my country is getting to be an institution. It motivates our very life, our ideals, our economics, even our political structure.'

The *Osaka Mainichi* and the *Tokyo Nichi-Nichi* combine has a circulation of more than 3,000,000. It employs the most modern devices like airplanes and pigeons for gathering and collecting news dispatches and expediting the distribution of Japanese newspapers. Mr. Fukumoto's agency alone has nine airplanes in commission.

'I cannot assure,' said Mr. Fukumoto, shifting the subject to the Philippines, 'whether the Japanese people show enthusiasm over the coming commonwealth. The average Japanese citizen is vaguely con-

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KELLY FIELD DURING THE WAR

DURING the World War Kelly Field was the largest aviation field in the United States and one of the greatest in the world. In a sense it was the favored child of the San Antonio Chamber of Commerce. A committee from this organization assembled the necessary land for this undertaking and presented the proposition to the Aviation Production Board in Washington in June, 1917. The contract was signed the following month, the land comprising all of what was then known as Kelly Field No. 2. The land embracing Kelly Field No. 1 was acquired a few months earlier. In addition to Kelly Field No. 2, a tract nearly as large, just across the railroad below Kelly Field No. 1, was leased, as was another tract, still larger, across the Somerset Road. The total acreage of what would have been these four Kelly Fields was over 6,000 acres. The Secretary of the Chamber of Commerce signed the contract on behalf of San Antonio and, at the request of the Aviation Department, the Chamber of Commerce leased the land from the owners individually and subleased it to the United States Government.

The haste under which the contract was worked out made it impossible to figure costs exactly, and the Chamber of Commerce offered the Government one of the most unique contracts in the history of the assembling of the aviation fields. This contract called for service by the Chamber of Commerce without profit and the guarantee that the books and accounts of the Chamber of Commerce as agent for the aviation fields should be examined periodically by U.S. Government officials, or at any time the Government officials might choose to examine the books; and that at stated intervals any excess over the actual cost of handling these aviation propositions for the Government should be returned to the Government.

The land covering what would have been Kelly Field No. 3 and Kelly Field No. 4 was released in the fall of 1917 at the suggestion of the British and French aviators on duty in this country, they being of the opinion that such large flying fields so close together would result in accidents and collisions.

The original flying in the United States Army was done at San Antonio; one lone hangar stood near what during the war was the center of Camp Travis, and Lieut. Benjamin D. Foulois, as he was then known, now Major General, was the pioneer of American Army aviators. At the time of the threatened trouble with Mexico in 1916, the entire army air fleet was assembled at San Antonio, and consisted of eight more or less antiquated machines. Unfortunately, the record of army flying will probably never give full credit to the daring young men who risked their lives flying these old machines into Mexico.

In the development of Kelly Field an enviable record of efficiency was established, not only in the gross number, but in the relative number of flying hours per airplane. At the close of the winter of 1917-1918, the total number of flying hours at Kelly Field was greater than that of all the other aviation fields in the United States put together. There is no doubt of the fact that the men trained at this great field contributed largely to the success of the American Army in France.

This stretch of land whereon the field lies comprised only a few scraggly cotton-fields, breaking the apparently interminable stretch of mesquite and cactus prairie. With the rolling up of the war clouds along the horizon, the great value of this strip of land as an aviation field was seen, and the genius of America was called upon quickly to produce here in reality what at that time only existed in the dreams of our Army organizers. And to what extent American genius responded was evidenced by the results subsequently accomplished. Kelly Field is a glowing memorial to the pioneers who dared not only to scheme and to plan, but to put these schemes and plans into execution.

It was in April 9, 1917, that four airplanes arose from the hangars at the old Remount Station (Camp Travis) and, after flying across San Antonio, alighted on what is now Kelly Field. Their pilots were men well known in early aviation circles, namely: the late "Eddie" Stinson, civilian instructor and a brother of Katherine and Margaret Stinson, the "Early Birds" among the women fliers; Captains Davidson, McDonald, Spotts, Lt. Bagnell, and one other man whose name is not recalled. They made their landing in a cotton field, an oasis amid a boundless stretch of waste covered by the prickly-pear cactus and mesquite. Tent hangars had been hurriedly erected there previously, and in these the machines were stored for the night, while the men made their beds upon the ground by the sides of their machines. This was the initial trip of airplanes to Kelly Field, but the actual formal establishment of the Field did not occur until May 7, when 700 men arrived. One week later, however, there were 4,000 men on the field. This was just a little over a week after the declaration of war against Germany. Men came in at a rapid rate, and soon the late Major Townsend

F. Dodd, of the Aviation Section, Signal Corps, in Washington, arrived to take charge of the definite organization of the field. The contract for its construction was let, and with lightning-like rapidity the ground was cleared, and almost as quickly as the cotton and mesquite disappeared there arose in their stead scores of buildings - hangars, barracks, mess halls, officers' quarters, warehouses, machine shops and all the necessary adjuncts of a first-class flying field.

The middle of October, 1917, saw the field crowded to its capacity, and almost before it was realized even by those who had it in charge, it had dwarfed all former expectations and become what they had hardly dared dream. Even then its expansion did not stop, for as America's eyes become more and more widely opened to the task she had before her, the great importance of aviation was recognized as never before, and the builders at Kelly Field were taxed to the utmost to provide accommodations for the rapidly increasing numbers of men. And until the signing of the Armistice this never-ending stream of men continued to pour into the field. Many passed on through the School and were transferred to still more specialized branches of training elsewhere, but many also remained at Kelly Field, and in the short space of time that had elapsed since the Air Service began its expansion, many departments, which were entirely unknown and undeveloped in the early days of flying, came to be recognized as absolutely essential.

Very little information regarding the wonderful extent of the organization at Kelly Field reached the outside world, but its high efficiency as a Flying School attested the success of the methods in operation. Every man arriving at the Field was "trade-tested" by a board of experts maintained for this sole purpose. Examinations in 53 different trades were given by this board- experts in this number of vocations being required for the operation of the Air Service at that stage of its development. Each man as he took his"trade-test" was classified regarding his degree of proficiency in any of the 53 trades with which he was familiar. Card records of each man's "trade-test" was maintained, and it was only the work of a few minutes for Headquarters to obtain a detachment of men for any particular line of work.

Since its earliest conception, Kelly Field was as a veritable "clearing house" for the other flying fields in the United States. Detachments were made up for all the other fields, and as fast as requisitions were received for men in certain lines of work they were quickly filled from the ranks of the skilled specialists awaiting assignment.

On September 15, 1917, the Flying Department of Kelly Field became a reality. It was then designated as Kelly Field No. 2 to distinguish it from Kelly Field proper, which then assumed the title of Kelly Field No. 1. Later, the name Kelly Field No. 2 was officially changed to the Flying Department. Thus came into existence the two great subdivisions of Kelly Field - the one, a concentration camp, handling the organization, instruction and supervision of the enlisted personnel for duty overseas and at the other flying fields throughout the country; the other, a flying field, training officers and cadets in their elementary instruction for flying duty overseas, and working under conditions similar to those that might be experienced on the actual field of battle. In fact, both fields united formed one of the nuclei of the American Air Service.

During the latter part of 1917, the Flying Department, although still in its infancy, started to devote its attention to the actual training of the fliers, and immediately undertook to perfect its organization to handle efficiently and expeditiously the vast amount of elementary training that was to be its share in the World War. Its administration was divided into the following principal sub-divisions: The Headquarters of the Flying Department, supervising the activities of the field; the Officer in Charge of Flying, supervising and handling the actual flying training of the officers and cadets;the Cadet Wing, directly in control of the curriculum and preliminary instruction of the cadets; and the Engineering Department, responsible for the actual upkeep and care of the planes and motors. Many other subsidiary departments were created to harmonize and assist in maintaining the field at its efficient standard.

As the year 1918 began and progressed, the Flying Department began to display its true stride of efficiency and speed, and its range of activities advanced by leaps and bounds. It was a hotbed of activity. The atmosphere was clouded with planes from daybreak to sunset;cadets and officers were completing their instruction in record-breaking time;the personnel were changing with rapid frequency; the workers in the shops and hangars were toiling night and day to keep every plane and motor in operation; and everyone was striving to the utmost to assist the country in its hour of need.

The early part of the summer of 1918, with its advent of good flying weather in the North, caused a temporary lull in the flying activities of the Flying Department. A number of northern flying fields were established, and the greater part of the cadets and student officers from various Ground Schools throughout the country migrated to the northern fields. However, the Flying Department still continued to do a lion's share in the elementary training. During the summer months plans were being perfected to handle more efficiently the huge portion of the training burden that would fall upon the Flying Department again in the Fall when, with the subsequent closing of the northern fields, the influx of cadets and student officers would revert back to it. In the Fall of 1918, the Flying Department was fully prepared and waiting for the hundreds of cadets and students officers expected to arrive for training. The Armistice, however, caused the War Department partially to suspend intensive operations, and the Flying Department was advised that henceforth it would continue only at a normal pace until the future destiny of the Air Service was established.

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JAPANESE GOOD-WILL FLIGHT TO MANILA

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scious of what a commonwealth means. Among our newspaper readers alone, it took our editors four entire months to enlighten the reading public on the various aspects of a commonwealth. But tell any Japanese country farmer that independence is coming to the Philippines and he will readily take what it means. We have long ceased to think in terms of our race. We are always orientals and peace for the orient is always peace for Japan.'

When the Dai-Mai landed at Grace Park at about 2:30 last Tuesday afternoon, it completed its schedule to an hour. The newspaper envoy attaches much significance to this fact because aside from blazing an air trail between Japan and the Philippines, the first one on record to be accomplished by an oriental, the Dai-Mai's successful trip will give impetus to the much-needed commercial airlines between Japan and the Philippines."

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NEW CONSTRUCTION AT FRANCE FIELD

Ten sets of officers' quarters, sixteen bachelor officers' apartments, twenty-two sets of noncommissioned officers quarters, and one dispensary are very near completion at France Field, Panama Canal Zone. In fact, they are promised by the first of February. They will be a welcome relief from the termit-eaten temporary wooden quarters now being occupied.

Preparations are now being made to move into the new hangars, and the new operations, parachute and Photo Section building just recently completed.

The enlisted personnel of the 25th Bombardment Squadron, and the Panama Air Depot, have found living conditions quite comfortable in their two new barracks.

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Major Willis R. Taylor recently returned from a short visit in the States, the purpose of which was to obtain information relative to a proposed air expedition to South America in search of Paul Redfern, the flyer who was lost in the jungles several years ago. Major Taylor reported a pleasant trip both ways, via the Pan-American Airways. He is stationed at France Field, Panama Canal Zone.

FELTS FIELD TO BE IMPROVED

Felts Field, Spokane, Wash., the base of the 41st Division Aviation, National Guard of Washington, received a real Christmas present from the Works Progress Administration. Presidential approval of an application for $265,880 for general improvement of the airport was received just before Christmas.

Works Progress Administration engineers surveying the one and seven-tents mile long airport found a difference of ten feet in the contour over a distance of 3,000 feet. This is to be brought within the air commerce regulation of one-half of one percent grade by the handling of about 300,000 yards of earth.

After the field has been made level, three surfaced runways are to be constructed, varying in length from 1,700 to 3,000 to 5,000 feet long. A total of 120 flush-type marker landing lights are to be strung on 14,000 feet of conduit on all sides of the surfaced landing strips.

Six additional flood-type landing lights are to be installed at east end of the airport, as there are already landing lights on the west end of the field, where the 41st Division Aviation Headquarters building and hangar are situated. The two long surfaced runways will pass directly in front of the Army hangar.

"Work on this project will be started just as soon as the money is allocated," said Mr. Joe Ott, local WPA administrator. "We propose to make Felts Field the finest airport in the Northwest. There will be 500 employables put on the project."

The application also includes erection of a fence around certain portions of the field, and the construction of a commercial hangar, 100 x 103 feet, for use by the Northwest Airlines. A beautification program is also included in the application.

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Eighty-five percent of the 140 students of the October class of the Primary Flying School, Randolph Field, Texas, were soloed. This represents the highest percentage for any class since the beginning of training at Randolph Field.

THE FLYING TRAINEE AT THE AIR CORPS PRIMARY FLYING SCHOOL

By Captain John M. Weikert, Air Corps
Commandant of Cadets

THE magnificent flight of Lindbergh to Paris in May of 1927 really marks the beginning of the present universal interest of American youth in aviation. It was this spectacular feat of personal courage and physical stamina that captured their imagination and fired them with the fanatic zeal to emulate his achievement and create for themselves a career in this new sphere of endeavor.

This air-consciousness swept rapidly thru the nation. All were affected by it. It was noticeable in the play and dress of children. High school youths everywhere formed Model Clubs and reproduced miniature models of current aircraft types that rivaled their originals for perfection of design and scaled down performance. The catch phrase, "Today's pilot of models will be tomorrow's model pilot," soon established itself as a definite fact. College students demanded courses in aeronautical engineering. Private schools in flying and for mechanical training sprang into existence in every thickly populated district in answer to the public's desire to fly. Even commercial aviation sensed the change in popular sentiment. Passenger traffic received a marked impetus and air mail and express tonnage increased on an otherwise inexplainable scale.

Public interest in the U.S. Army's Air Corps Training Center reflected this national popularity in a sudden barometer-like rise in the receipt of letters of inquiry, and subsequently, in applications for training. The attention of America's young career-men was focused on the Government's aerial training system, its efficiency having previously been accorded universal recognition and the professional opportunities it presented. Here they found an outlet for their desire to learn to fly, and at no expense to themselves, plus unlimited possibilities for commercial connections thereafter, or for service with the military establishment.

By a fortunate coincidence, the effects of this engulfing wave of interest arrived coincidental with the preliminary efforts of the Air Corps to absorb the increase in personnel included in the Five Year Program as authorized by the Act of July 2, 1926. In order to raise the standard of the graduate of the school to a type readily assimilable by the Air Corps of the Regular Army, the National Guard and the Reserve Units, it was decided to step-up the entrance requirements. This policy served the dual purpose of curtailing the number of successful applicants, a vast number of whom would have been eligible for training under the former lower requirements, and of limiting this preferred type to men of the highest possible educational and physical calibre.

October 15, 1931, marks the date of the geographical re-concentration of the Air Corps Training Center activities in San Antonio, Texas, and its environments, for it was on this date that the beautiful and permanent structures within the confines of the world's greatest flying field were first occupied. On this date the two Primary Flying Schools from Brooks Field and from March Field were consolidated and their airplanes, equipment and personnel moved to their new home at Randolph Field. From this move it is comparatively simple to obtain an accurate picture or cross section of the later day cadet student body, as all records beginning with this event are readily available. In consequence, all statistical data is commonly presented from this point.

The Flying Cadets are all young, unmarried citizens, between the ages of twenty and twenty-seven years inclusive, of good character, sound physique, and who have had at least two years of college work. If lacking the required educational credentials, they must demonstrate their proficiency by successfully passing examinations in United States History, English, General History, Geography, Higher Algebra, Geometry, Trigonometry, and Physics. The educational equation is simplified for many of these aspirants by their possession of diplomas and degrees from the country's many colleges and universities.

Professionally, these trainees - considering their youth - are from all walks of life. As a class, the civilian element is in preponderance; however, at times there is a liberal sprinkling of men with a military background. Geographically, all states in the United States are represented, with occasional applicants from the various foreign possessions. Students from foreign countries are frequently included in the student officer classification. This latter group approximates about twenty-five per cent of the entire enrollment. Their training is identical to that of the cadet, but they live and are administered separately.

During the interval embraced by the dates of October 15, 1931, and March 1, 1935, a total of 2,022 would-be pilots have reported to the Air Corps Primary Flying School. Of this number, 1,595, or approximately seventy-five per cent were Flying Cadets, and the remaining 427 were student officers. The cadet increment was comprised of 1,355 civilians and 240 military men, while the 427 student officers were classified as 407 Regular Army officers and 20 foreign students coming from the following countries: 7 from Mexico; 2 Brazil, 2 Philippines, 3 China, 2 Turkey, and 1 each from the following countries: Germany, Guatemala, Cuba and Colombia.

Other factors relating to this group are interesting. For example: of the 2,022 entrants, 1480, or 73 per cent were college graduates. Of this number, 1,042 were from the many colleges and universities of the country at large, while 398 were graduates from the U.S. Military Academy and 40 from the U.S. Naval Academy. Then, too, of the 2,002 who enrolled, exactly 950, or 46.9 per cent, completed the course and graduated from the Primary School at Randolph Field. The remaining 1,072 are accounted for as follows: 1,009 eliminated for flying or academic deficiencies, 58 resigned of their own volition, and 5 were killed. This final figure deserves especial consideration and is considered remarkable. It represents the infinitesimal percentage of less than one-half of one per cent of the total number graduated. When compared with similar statistics for training during the war period or with the peace time records of the schools of the armies of other nations, this small proportion is a monumental tribute to the efficiency of the Air Corps training methods.

The two classes now undergoing instruction are also very interesting. The present primary phase or entering class of October 15, 1935, is composed of 58 student officers and 92 Flying Cadets. Of the former, six are older officers of the permanent establishment, four are officers of foreign countries, and 48 are young second lieutenants who graduated from the Military Academy in June of 1935.

In the July class, or those on the Basic phase, there now remain 12 officers, all of the United States Army, and 50 Flying Cadets. The total personnel now undergoing instruction in both classes is made up of 70 officers and 142 cadets. A detailed study of the latter discloses the following facts. The 142 men from civilian pursuits attended 89 leading colleges and universities of the Nation. There are seven representatives from the University of California, four each from the institutions of Idaho, Minnesota, Tennessee, and the Idaho State College and the remainder from other leading educational centers. Seventy-three, or approximately 50% of these 142, are graduates, while the remainder, except for two who took the entrance examination, had the prescribed minimum of two years' college work. As to geographical distribution, there are thirty-seven states represented; California leads with 24, Texas has 11, Washington 8, and Pennsylvania and Minnesota 7 each.

In reply to the question regarding the future of the trainee, this answer can be made: First, practically all who finish at the Primary Flying School graduate four months later from the Advanced Flying School. Following that, the American officers are assigned to Air Corps stations for duty with tactical troops. Their career in the service was definitely established previously; now they are but committed to the Air Corps as the branch of their choice. Second, the Flying Cadet is also assigned to a tactical unit where - still as a cadet -he obtains an additional year of seasoning and experience. This is followed by a year, or perhaps two, of active duty as a second lieutenant in the Air Corps Reserve. Upon completion of this period, he reverts to his former civilian status, but he may and can maintain active contact with the Service through membership in the National Guard or Organized Reserves. Third, as a civilian with this wealth of flying experience behind him, he is in a favorable position to seek employment with a commercial aviation company. Then, too, there is the recent possibility of securing a permanent commission in the Air Corps.

As an additional reward for the time devoted to aviation, the Flying Cadet has the consolation of knowing that he has fulfilled his youthful ambition - to fly; that he has received the best training in the world, an intensified schooling that would cost him a fortune to procure from outside sources if it could be duplicated; and, further, that he has been given other emoluments while receiving free this unusual training. He must also realize that he is one of the four hundred persons selected by his Government annually from the enormously interested collegiate group to receive this expansive military flying education.

The time spent by the flying cadet in his favored occupation is not wasted. As a preferred individual, the thrill and exhilaration of aviation as a sport is ample compensation for the two or three years devoted to the Service. Also, during this period of his life, while he is gainfully occupied preparing himself for a career, many of his associates are idle or are aimlessly busied with nondescript tasks at mediocre salaries. Then, too, while mastering the elusive and exclusive art of flying, he is molding his character and developing qualities of personality that make for better citizenship through his contact with the disciplined orderliness of military life. The statement that the time devoted by the trainee to his training as a military pilot is "spent" is a misnomer as, on the contrary, it represents an "investment" in a probable future career.

THE WEST POINTER AT THE WEST POINT OF THE AIR

By 2nd Lieut. Jack W. Hickman, Air Corps (CE)
Former Executive Staff Editor - "The Pointer" - '35

TO those uninitiated we want to say right here that the A.C.T.C. is not another bureau for giving loans to farms. Rather it is the institution that makes flyers out of farmers - the Air Corps Training Center. Another common misconception is that Randolph Field and the A.C.T.C. are synonymous. Randolph is but one-half of the entire picture. It houses the Primary and Basic phases of the training. The advanced course is carried on at Kelly Field on the other side of town. Both fields are under the command of one general officer. Each in turn has its own commandant and staff of instructors. And then, of course, over all is felt the lightly benevolent influence of the Eighth Corps Area. But enough of these administrative details. Suffice it to say that there are plenty of people looking after the affairs and welfares of the student officers.

And so we pass to life at Randolph. The new class reports about the middle of September. From then until the middle of October duties consist mainly of initialing the bulletin board once each day. The remaining twenty-three hours and fifty-nine minutes are the individual's responsibility. The social whirl is terrific. It seems that the sight of fifty spanking-new, able-bodied second louies makes any hostess go berserk. The latchstring at Fort Sam Houston is always out. At Randolph the usual rounds of handshakes and shindigs are in order. With a view of giving a bit of practical training, most young officers find themselves attached to a squadron for troop duty. These morning conferences with a kindly C.O. are invaluable when it comes to picking up lessons about mess, supply and paper work.

During the afternoon most men devote themselves to some form of voluntary athletics. This takes the form of a bitterly contested kitten-ball game, a set or two on the tennis courts, a battle of strikes and spares on the local bowling alleys, a red hot ping pong series, or even a rubber of raucous bridge barring no "holts." The average officer finds this month the best part of his graduation leave. The surroundings are ideal. The post is the most beautiful and well appointed in the Army. The Air Corps has a justified reputation of free-and-easy hospitality. San Antonio is a delightfully friendly city, combining the charm of the old South with the dash of dusky Mexico and the modernism of the West.

And then came the dawn! Late in October on a clear, cheerful Texas Monday morning, the student takes his first ride in a PT-3. He climbs to a thousand feet and sees his home from the air and traces the Austin road into San Antonio. He splashes thru his first sloppy turn. From now on, it's early to bed and early to rise makes one healthy, wealthy, and solo. Along with two hours of flying there is an equal amount of ground school each day. The courses are in the main a bit of specialization on the West Point academics. While at Randolph, one studies Engines, Carter's Aerodynamics, Navigation, Gunnery, Maps, Meteorology, Buzzer, and Equipment of the Pilot. These may sound difficult, but a half-hour each day will keep the average student officer properly prepared and proficient.

Of course, from the first day everyone thinks of but a single topic - flying. During the first or second week in November the all-absorbing topic of conversation is the first solo. Some morning after a particularly rough landing, the instructor clambers out of the ship and says, "Well, you can't do any worse alone." The fledgling gulps twice and gives her the gun. At four hundred feet he wiggles the stick a couple of times, tentatively, just to see if the ship recognizes him. A few turns and he glides in to a breathlessly happy landing. The solo is successfully accomplished! That alone has been sufficient recompense for hours of study and training. If a "washing out" takes place next week, the solo has made it all worthwhile.

From the Primary Stage, the fortunate few making the grade move across the field for basic training. Here the stress is laid on more difficult phases of flying - blind flying, radio, night flying, formation, and strange field landings. A bit more of selective culling and the two hundred-hour wonders are ready for Kelly Field and the Advanced School. The student officer is given an opportunity to specialize in his favorite branch of flying - be it Pursuit, Observation, Bombing or Attack. There is no excuse for washing out of this school. The ground school is no more extensive than before. The flying can be mastered by anyone who has satisfactorily finished Randolph and continues to apply himself.

And so comes October week and graduation. There is the same old lump in the throat and throb in the handclasp that every West Pointer felt at his last graduation. The class passes in review - formation flying. The speeches are said. The wings are pinned. It is goodbye to the West Point of the Air, San Antonio, and Texas. It is hello to the Air Corps.

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ITALIAN CONSUL ADDRESSES NATIONAL GUARD AVIATION OFFICERS

"Well, you know better than me."

Several times he repeated this remark in his broken Italian-American tongue, and each time with a characteristic wave of his hands.

Francesco Parenti, an Italian pilot in Admiral Balbo's air corps, recently gave a talk to officers of the 41st Division Aviation, Washington National Guard, Felts Field, Spokane. Pilot Parenti is now the Italian Consul in Seattle, Wash., and was a guest speaker before the officers. The officers knew what the Consul meant by his remark because, the Consul, unlike his listeners, is not active in aviation today and, therefore, is not acquainted with the latest aeronautical developments. However, his remark "you know better than me," left the pilots thinking, after Mr. Parenti had told how there are today in Italy 15,000 trained pilots, all subject to more or less jurisdiction by the Italian high air command.

In a modest manner, and with a soft voice, Mr. Parenti, assisted in pronouncing some English words by Attorney Joe Albi, Spokane Italian Consul, told how commercial air line pilots meet weekly with the Italian air forces for discussions of military aviation problems and latest developments.

"Three months each year," said Mr. Parenti, "these pilots not in the regular air corps are called into active training. Italy is constantly training new pilots. Some are taken as young as 17 years and become pilots, although not regular commissioned officers.

All commercial aviation in Italy comes under the jurisdiction of the Italian air command. All commercial pilots are former Army Air Corps pilots."

The speaker refrained from any mention of the present conflict between his country and Ethiopia, coming nearest to this topic as he walked to a map to illustrate why Italy does not believe it necessary to build naval airplane carriers.

"The nature and amount of our coast line does not seem to make carriers necessary," he explained.

He gave credit for the strength of the Italian air force to Premier Mussolini, "who became a licensed pilot in 1922."

"All high political officials in Italy are licensed pilots," he added, leaving the very good inference as to the reason why Italy's air force has gone ahead so rapidly. "Italy has three airplane factories which, while operated commercially, are subject to dictation by the Italian air command. These factories can turn out airplanes very rapidly."

Several times during his remarks, Mr. Parenti spoke most favorably about Bombardment airplanes, mentioning discussions he had heard about Bombardment airplanes flying from Italy to London and return.

"The American airplane, I like it very much," he said. "It seems so strong, and 'architecturally' correct. Italy has not experimented with American-made airplanes. Our motors are not like yours. Italy has made some fine aviation records. And America has made some too.

"Well, you know better than me."

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A flight of four planes represented the Primary Flying School at the Air Force maneuvers and Air Races at Miami, Fla., the week ending December 14th. Officers making the trip were: Captains Turner, Weikert, Lieuts. O'Neal, Alkire and Fulton. "These officers," says the News Letter Correspondent, "reported that they enjoyed the maneuvers but were glad to be home where the weather isn't so cold and 'the sunshine spends the winter.'"

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The School of Aviation Medicine, Randolph Field, Texas, graduated a class of ten new Flight Surgeons on December 14th. This class included one medical officer from the Mexican Army, Major R.T. Prieto, and two medical officers from the United States Navy, Lieut. (JG) David C. Gaede and Lieut. (JG) Anselm C. Hohn.

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Despite the heavy rains in the Philippines which prevailed throughout the first quarter, a great deal of flying has been carried on by the Third Pursuit Squadron, stationed at Clark Field. Particular attention is being paid to blind flying training. One O-19C airplane, which the Squadron has available for this purpose, is being kept constantly in use.

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Special Orders of the War Department announce the relief of Captain George C. McDonald from duty in the Office of the Chief of the Air Corps, effective Feb. 13, 1936, and his assignment to the 97th Observation Squadron, Mitchel Field, N.Y. Our best wishes, Captain, but we are sorry to see you go and we'll certainly miss you.

APPOINTMENT AS FLYING CADET

EARLY one morning in December, a squadron of planes took off from Hamilton Field, one of the Army Air Corps stations in California, for the air maneuvers being held that year in Miami, Florida. A young lad, setting out on his early morning chores on his father's ranch in Arizona, hearing the zoom of the motors looked skyward, and as his glance followed the formation winging its way east, he wished he could afford a course in flying. A few hours later, as the planes soared high over one of the many college towns in the great southwest, a young student, crossing the campus, stopped to watch the flight and wondered if after graduation he might be able to take up flying as a career. Still later at an Air Corps field in one of the southern States, as the planes circled in for a landing, a young soldier in his first enlistment watched, and as the pilots crawled out of the cockpits determined that some day he would wear the wings that meant he too could pilot an Army plane on some such mission.

The boy in Arizona was twenty years of age and had completed his second year at the State University, but because of depression finances was unable to continue his schooling. The boy in the college town was in his senior year; and the young soldier had completed high school and was definitely interested in mechanics.

To each of these boys and many more like them, energetic, ambitious young Americans, the Army Air Corps offers a splendid opportunity to learn to fly at Government expense. The training covers a period of two years, one year at the Air Corps Training Center, Randolph Field, Texas, sometimes called the "West Point of the Air," and one year training with a tactical unit of the Air Corps. At the end of the two years, the student has had approximately 550 hours in the air.

This training is given those candidates who qualify under the prescribed regulations for appointment as Flying Cadet. The candidate qualified and accepted for appointment is enlisted, or in the case of enlisted candidates, appointed a Flying Cadet and receives a base salary of $75.00 a month while undergoing training. His ration allowance is one dollar per day and he is furnished uniforms and equipment without cost.

Information pertaining to the training, the general requirements and the procedure to be followed in submitting application may be obtained readily at no cost. The lad in Arizona may write to The Adjutant General of the Army or the Chief of the Air Corps, Washington, D.C.; the boy in the college town may apply to his Professor of Military Science and Tactics; the enlisted man may talk it over with his commanding officer. But each one has the same opportunity of qualifying for appointment as Flying Cadet and being sent to Randolph Field for the course of training that has developed some of the finest airplane pilots in the world.

Upon receiving the little pamphlet issued by the War Department concerning the training, the candidate will find that to be eligible for appointment he must be not less than twenty years of age and not more than twenty-six at time of application. Existing regulations preclude the appointment of candidates after they have reached their twenty-seventh birthday. He must also be unmarried, a citizen of the United States, in good physical condition and have completed satisfactorily at least two years of collegw work or have sufficient education to pass a written examination in lieu thereof. Satisfactory completion means an average grade of at least "C."

If he feels that he meets these general requirements, the candidate should complete the necessary application forms for appointment, which may be obtained from The Adjutant General of the Army or the Chief of the Air Corps, taking care that each item is properly and carefully answered, the affidavit certified to, and the necessary letters of recommendation and scholastic evidence attached. Then, after sending the completed application to The Adjutant General of the Army, he will wait about two weeks before receiving authorization to communicate with the Flying Cadet Examining Board nearest him as to the date he is to report for examination.

The Flying Cadet Examining Boards are located at practically all Air Corps stations and at a limited number of other Army stations where the equipment for giving the physical examination for flying is available. A board is generally composed of at least three Air Corps officers and one Medical officer - the Flight Surgeon. Examinations of those candidates required to take the written educational examination are held three times a year, generally the second Tuesday in April, August and December. Examinations of all other candidates can be held on any convenient date.

As candidates are required to pay all expenses incident to reporting for examination, such as the transportation involved and the money expended for food and lodging during the period of the examination, which is from one to three days, each candidate, in order to avoid unnecessary expense, should, before reporting for examination, be reasonably sure that he is in excellent physical condition and that he either has the required college work for exemption or is prepared to take the written examination in lieu thereof.

The Examining Boards often advise a candidate to have a physical check by his family physician before reporting in order to determine whether he has any defect which would definitely disqualify him for the training or a temporary defect such as diseased tonsils, nasal obstruction, defective dentition, etc., which are correctable and should be so corrected before he could be considered qualified under the rigid physical requirements for the flying training.

Those candidates claiming exemption from the written examination should be able to present a statement from the Dean or Registrar of an accredited college that they have completed one-half or more of the necessary credits leading to a degree at that institution normally requiring four years' work. Unless a candidate can present this statement, exemption from the written examination can not be granted him. By accredited college, the War Department means those colleges recognized or accredited by the several National and Regional Educational Associations. If a candidate is in doubt as to the standing of his college, information may in all probability be obtained from his State University or his State Department of Education as to whether or not his college appears on the list. Often a candidate is attending or has graduated from an institution that is a specialized one of its kind, and while giving a very good and intensive course in its specialty is not included on the accredited list. In such cases, if the applicant is able to obtain a certificate from his State University or other accredited college that his credits will be acceptable for full junior standing, consideration may be given his request for exemption. The high school graduate and the man with one year of college work may take the written educational examination. As this examination is given only three times a year, a candidate has sufficient time to study up on the subjects required, either by himself or with some good correspondence school or preparatory school in his vicinity. Failure in one educational examination does not preclude the candidate from taking the examination again, if he so desires. However, as the course in training comprises, in addition to flying, certain ground-school subjects, such as navigation, meteorology, aerodynamics, etc., an applicant should have at least a high school education and should have a good basic education in mathematics and physics.

When the candidate appears before the Examining Board for examination on the date authorized (which in the case of those exempt from the written examination is generally within one to two months of submission of application), he first appears before the medical officers for the physical examination. If found to have any major defect which is definitely disqualifying for flying, the rest of the examination is not given.

The physical examination is comprehensive and thorough, and covers just about everything. Of course, special attention is given to those items of particular importance in aviation - vision, hearing and a stable nervous system. Many a candidate who would make good in ordinary pursuits falls down on the physical examination for flying; many a college athlete, who looks a specimen of perfect young manhood physically, is found to have a blood pressure a little too high, or a heart that over-training has made unfit for the intensive strain and stress of flying training. The fortunate candidates, generally about forty percent of those applying, who pass the physical inspection by the Board, are then given the rest of the examination. Those required to take the written examination spend the remainder of the time, with appropriate periods for rest and relaxation, answering the questions in the nine different subjects prescribed for the examination. And a man who passes this examination has accomplished something. The men not required to take the written examination appear before the members of the Examining Board and are subjected to such an interview as would be given any young man applying for an important position with a responsible firm.

After the candidate has completed the prescribed examinations, he returns to his home to await further word from the Chief of the Air Corps as to whether or not he has been found qualified for appointment. All examinations, physical as well as educational, are subject to review in the Office of the Chief of the Air Corps. There is a great deal of paper work connected with the examinations, and it may be from four to six weeks, especially in the case of those candidates taking the educational examination, before final action as to qualification can be taken.

Notification is sent to each candidate of the outcome of his examination and, if found disqualified for appointment, the letters of recommendation and scholastic evidence furnished with his application are returned to him. All papers of qualified candidates are retained in the office of the Chief of the Air Corps and they are notified that they have been found qualified for appointment and their names placed on the eligible list for assignment to school for training.

Classes in training start three times a year, generally the first of March, the first of July and the fifteenth of October. Normally, the quota for the March and July classes is 150 Cadets, and for the October class, 75. The October class is limited because of the number of West Point graduates of the preceding June class who have qualified for and been detailed to take the training.

About six weeks prior to the commencement of a class, selection is made from the eligible list of the quota to be assigned to that class, and each candidate selected is notified promptly in order that he may make the necessary arrangements preliminary to reporting for training. Selection is made according to a priority prescribed by the War Department which must be followed when there are more qualified candidates than can be included in the quota allotted for each class. First priority is accorded enlisted men of the Regular Army and members of Air Corps units of the National Guard who have served a prescribed period. College graduates come next, then members of National Guard units other than Air Corps, and then those who have no military status and have not completed their college work. Although there are generally more qualified candidates than can be taken care of with existing facilities at the Training Center, present conditions permit the early assignment to school for training of practically all candidates who qualify.

Sometimes, because of illness, a desire to complete his college work, a contract that cannot be broken, or other personal reasons, a candidate is unable to accept appointment to the class for which selected. In such cases, upon request to the Chief of the Air Corps, postponement to a later class may be granted, and another candidate will be substituted in his place. In this connection, when a candidate has been on the eligible list for a period longer than six months, another physical examination for flying will be necessary before his enlistment as a Flying Cadet can be accomplished.

All arrangements for enlistment are made by the Recruiting Office nearest the applicant's residence. Transportation from place of enlistment to the school is furnished the candidate by the Recruiting Officer. Enlistments are made for a period of three years, but any Cadet found disqualified for further training is discharged and not required to serve the unexpired portion of his enlistment period. All enlistments are accomplished in sufficient time for the candidate to arrive at the Training Center on the date designated.

And on that date, pouring into Randolph Field by train, by automobile, on foot, even perhaps in their own planes, as did Lindbergh over ten years ago, come these young men to earn after one year's intensive training the wings that proclaim them airplane pilots in the Army of the United States.

And after this year at the school, and a second year training with a tactical unit at an Air Corps station, in Pursuit, Bombardment, Attack, or Observation, these men who have completed the course of training are equipped to enter the aviation world as qualified military pilots. Recognized as products of one of the finest training systems in the country, some will enter the employ of various commercial transport lines; some more interested in the manufacturing and engineering phase of aviation will obtain positions with the leading airplane manufacturing companies; some will enter into the experimental and research fields for the great amount of work which remains to be done to make flying safer; while still others, having grown to love the Army life during their two years of service, will plan to make Army flying their career and will qualify for appointment as a second lieutenant in the Army Air Corps and, perhaps, in a few years be back at the Training Center instructing the young Flying Cadets then entering how to fly in the Army way.

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A CORRECTION

In connection with the article on the "First Gordon-Bennett Balloon Cup Race," which appeared in the issue of the News Letter of December 1, 1935, it is regretted that an error was made in giving the name of Colonel Frank P. Lahm as the author of this story. As a matter of fact, this story was written by Colonel Lahm's father, the late Mr. F.S. Lahm, who died in Paris towards the end of the year 1931, just at the beginning of Colonel Lahm's tour as Assistant Military Attache at the American Embassy in the French Capital. Colonel Lahm merely added some few details to the above-mentioned story with which his father could not have been familiar.

This story is one of many which Colonel Lahm's father wrote during his last years. He became interested in aeronautics in Paris about 1901 or 1902, when he made his first balloon ascension. During the World War he was offered a commission in the aviation service of the American Army for duty in the Lighter-than-Air Branch. He declined the commission, but served in the office of the Chief as a civilian, although over 70 years of age.

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The Third Attack Group, Barksdale Field, La., has had three A-12's equipped with SCR-T6 Liaison Sets, and extensive tests were made at that station for the first ten days of November under the supervision of Captain Wallace Smith, Air Corps, Materiel Division representative. The planes were then flown to Wright Field for further tests at the Materiel Division.

GLOSSARY OF SLANG EXPRESSIONS AND TERMS USED BY THE TRAINEES AT THE AIR CORPS TRAINING CENTER

The Flying Cadet organization at the Air Corps Training Center, although comparatively young in years, is already surrounded by a flying tradition rich in idiomatic expressions and aeronautical slang. Several of these cryptic words and phrases are a heritage from the wartime training era, but the majority are products of the present centralized training system inaugurated at the opening of Randolph Field.

The beginning of each new class at the Primary Flying School is marked by a period of strange activity in the Cadet Area. Judging from the frantic antics of its most recent occupants and the weird noises that emanate from their barracks in the early evenings, one would imagine that a miniature Babel was in the process of painful construction. However, there is no cause for alarm, as the strange sounds and queer sights are but the by product of the high pressure induction of the new "Dodo" into cadet life.

To the older graduates who have unintentionally forgotten and to the youngsters who may wish to forget, the following tabulation is dedicated:

Around the ramp: At this command all Dodos run around the paved area in front of the barracks.

Around the third stoop: At this command the Dodos run to the end of the barracks, climb to the third floor, run to the opposite end of the building and descend to the ground floor, returning to their original position.

Bail out: At this command the Dodo makes a motion as though he were pulling his ripcord, extends his arms straight in front of him and assumes a position midway between a standing position and on his haunches.

Brace: An exaggerated position of attention.

Bruss: An exaggerated brace.

Blowers: The name by which "B" Company is designated by the "A" Company misters.

High Pockets: The name by which "A" Company is designated by the "B" Company misters.

Cadet Widow: Is a name applied to a young lady who has known Flying Cadets for several years.

Dawn patrolling: One is said to be dawn patrolling when he arises before reveille.

Dodo: The name given to a lower classman which he retains until he is promoted to the upper class.

Dodo Tom: The name given to the "B" Company janitor because he is new at the job, having been with the Company for only 14 years.

Duck, you Dodos: Is the command given when an airplane flies over real low, at which time the Dodos have to get down and place their heads upon the ground.

Double reclining rest: A command permitting the Dodos to sit down.

Falling down rest: At this command the Dodo must lie down on the floor.

Flying the Night Mail to Seguin: The name given to the act of the Dodos forming in the shape of an airplane and pretending to fly.

Get eager: To strive to the utmost.

Gig: The popular name for a demerit.

Kiwi: A non-flying commissioned officer of the Air Corps.

You're gigged: Means that one has been reported for violating a rule or regulation.

Gun: To gun anything is to have a waiter get it.

Gunner: One of the two Dodos that sit at the end of the tables in the mess hall and see that all the dishes on the table are full at all times.

Hit those doors: A command for the Dodos to get out of their rooms and in a big hurry.

H.P.: Hot Pilot - One who is exceptionally good.

Rats: Rolls or balls of lint and dirt that accumulate upon the floor; most noticeable when standing at attention during an inspection of quarters.

Mice: Little rats.

Mister: Formal title employed when addressing other cadets, especially Dodos.

Poetry night: Thursday night when each Dodo has to have a poem of his own creation. On this particular night the Dodos can say anything they like in their poems.

Position of a dodo bird: A position on one's haunches with the arms extended in a horizontal position and straight out from the body.

Pop it out: An expression meaning to expand one's chest to the limit.

Power Birds of War: A name given to all Flying Cadets.

Push button pilots: A name given to all who regularly fly the PT-11's, a training plane much easier to fly than the other primary types.

Reck Hall: The name given to the Flying Cadet recreation hall.

Raunchy: A name applied to anything that is dirty or in bad shape.

Reaction time: The amount of time it takes for one to come to attention when an upper classman steps before him.

Shoot: Go ahead and talk.

Sound off: To tell where one is from, where he went to school, the athletics participated in; the fraternity, if any; previous military experience; previous stick time, and for what he is famous.

Snap to: To come to attention.

Spin in: To fall down or get excited.

Storm: Name applied to the condition one is in when he is excited and doesn't know what he is doing.

Serious: Anything that is important.

Seriass: Anything that is unimportant.

The Gray Ghost: The Stage Commander's airplane - because it is the last plane one rides in before being washed out.

Take-off: To leave any place at a high rate of speed.
Theory of Fright: Meaning Theory of Flight.
Up and down: To run.
What the horrible hell: An expression of great surprise.
Wash out: To be eliminated, or one who has been eliminated from the Flying Cadet Detachment.
The Washing Machine: The Flight Commander's airplane.

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CONTRACTS FOR NEW AIRPLANES

The Assistant Secretary of War, Hon. Harry H. Woodring, recently announced the award of a contract for 100 Attack airplanes and for spare parts equivalent to 15 airplanes to the Northrup Corporation, Inglewood, Calif., in the total amount of $2,560,074.00, also a contract for the procurement of 90 Bombardment airplanes to the Douglas Aircraft Company, Santa Monica, Calif., at a total cost of $6,498,000.00. Of these 90 Bombers, 32 are to be delivered, by flight, to tactical units, and the remaining eight to Air Corps depots as spare parts.

Announcement was also made of the purchase of one squadron of four-motored Bombers, consisting of thirteen planes of the latest design as submitted by the Boeing Company of Seattle, Washington. The manufacture of these planes will be undertaken at once.

In accordance with the established practice of the War Department, the airplanes for which the awards were given have been thoroughly tested by the Air Corps Materiel Division at Wright Field, Dayton, Ohio.

The Northrup Attack plane is of the all-metal, low-wing monoplane type with retractable landing gear. The airplane is as small as consistent with the loads to be carried and performance required, and is two-place and single engined. High speed and maneuverability are the pertinent characteristics.

The Douglas Bombardment airplane is also of the all-metal, low-wing monoplane type. It is powered with two "Cyclone" engines, and represents a marked advance over types of Bombardment planes now in service or being procured.

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SELFRIDGE PLANES RETURN FROM MIAMI

Six P-26A airplanes, with Captains Dixon M. Allison, John F. Egan, Daniel C. Doubleday and 2nd Lieuts. Eugene Brecht, Jr., William T. Hudnell and John O. Neal as pilots, arrived at Selfridge Field at 7:45 p.m., December 11th, just eleven hours after they had taken off from Miami, Florida, where they participated as a part of the 27th Pursuit Squadron in the Second Wing, GHQ Air Force, concentration. The return was made via Jacksonville, Fla.; Atlanta, Ga.; Nashville, Tenn., and Louisville, Ky. The remaining twenty-six P-26A airplanes and pilots of the 27th Pursuit Squadron participating in the concentration at Miami, including the flight led to Miami on December 5th by Colonel Royce, and the transport piloted by Major McCormick and carrying four enlisted passengers, returned to the home station on the afternoon of December 16th.

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ONE TOUGH ZOMBIE

'Lo and behold!" says the News Letter Correspondent from France Field, Panama Canal Zone, "from one of our contemporaries of Albrook Field comes a miracle meant only for the Gods. It seems that a short time ago 1st Lieut. Albert W. Shepard exposed himself in such a manner as to be bitten by a Fer-de-Lance, one of the deadliest of snakes, the bite of which causes death in the estimated time of fifteen minutes.

But - may wonders never cease - the victim failed to die as is customary in such cases and, what's more, the effect was so slight that he was seen later on in the evening stepping out with some of Panama's elite, while the snake died of its own accord.

And now the personnel of Albrook Field may be seen strutting around with their chests out repeating 'When tougher men are built, Albrook will build them.'"

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THE SCOTT FIELD AMATEUR RADIO STATION

Scott Field's amateur short wave radio station W9CJH is operated by Private Frank W. Brashears, of the 9th Airship Squadron. The station uses a crystal controlled set and operates on 3951 kilocycles for radiophone and on 3603 and 7206 kilocycles for code. The station is on the air from six to seven P.M. daily, and is anxious to communicate with other Army amateurs.

Station W9CJH was moved from New London, Mo., where it was operated for 13 years by Private Brashears, to Scott Field, Ill., in December, 1934. The station was a member of the now discontinued Army Amateur Net.

Private Brashears has a class of radio students which spends the evenings learning the code and picking up practical radio knowledge. Some of the former students have become members of the radio section of the airship crew.

The station has been operating for a year on 200 watts. It is hoped that it will soon be able to operate on 500 watts.

Although the station has continued holding communication with civilian amateurs of past acquaintance, it is very anxious to learn the broadcast schedules of other Army amateurs in the many other posts scattered throughout the United States and its dependencies.

HISTORY OF KELLY FIELD

By Captain James B. Burwell, Air Corps

SHORTLY after the United States declared war, in April, 1917, construction work was begun on an aviation camp about five miles southwest of San Antonio, Texas. In May, 1917, there were 25 officers and 4400 enlisted men, as well as a number of civilians, engaged in the construction of the field. On June 11, 1917, the aviation camp was designated "Camp Kelly" in General Orders, No. 32, Headquarters Southern Department, Fort Sam Houston, Texas, and on July 30, 1917, the camp was designated "Kelly Field" by General Orders No. 49, Headquarters Southern Department, Fort Sam Houston, Texas. The field was named by Major-General James Parker, National Army, in honor of 2nd Lieut. George E.M. Kelly, 30th Infantry, who lost his life in line of duty in the Aviation Service at San Antonio, Texas, May 10, 1911. Lieut. Kelly was the second United States Army officer to be killed in an accident to military aircraft.

Lt. Kelly was born in London, England, December 14, 1878, came to the United States in 1896, and enlisted in the 84th Company, Coast Artillery Corps,on January 14, 1904. Two years later, he passed the examination at Fort Leavenworth, Kansas, for commission, received appointment as a second lieutenant and was assigned to the 30th Infantry in January, 1907. He went to the Philippine Islands with the 30th Infantry in July, 1907, where for a year he was on topographical survey missions on the Island of Luzon. He left the Philippines in July, 1909, and, after visiting China, traveled through the Suez Canal to England, where he observed the British Army Maneuvers in the fall of 1909, returning to the United States in December of that year to rejoin the 30th Infantry in San Francisco. His battalion, under the command of Major J.P. O'Neil, attended an aviation meet at Selfridge Field, where Lt. Kelly took several aerial photographs. In February, 1911, he was detailed by the War Department to proceed to San Diego to take instruction in aviation under Glenn H. Curtiss. A few months later he brought one of the first airplanes owned by the Army to Fort Sam Houston, Texas, where on May 11, 1911, he was killed in an airplane accident. He was buried in the National Cemetery on East Commerce Street, San Antonio, May 15, 1911. The honorary pall bearers were Lts. Paul W. Beck, B.D. Foulois, John C. Walker, Fred C. Test, Horace M. Hickam, and O.O. Ellis.

Lieut. Kelly's family, which still resided in Ireland, was notified that Kelly Field had been named in his honor. Mrs. May Bell-Kingsley,of County Tipperary, under date of September 14, 1917, wrote on behalf of the family, the following letter of appreciation to Major General Parker:

"Sir: I wish to offer you in union with my family my deep and grateful sense of the abiding memorial you have lately initiated of my dear nephew, Lt. Maurice Kelly's self-sacrificing act at Camp San Antonio. As the widow and mother of soldiers I realize the significance of this noble and soldier-like testimony to a brave man, and I am sure your gallant American Army will appreciate it, and learn that a heroic action is not confined to one age but is a lesson for all time. Pray accept this very imperfect appreciation of your just and generous action.

"I have the honor to be, Sir, your obedient servant,

May Bell-Kingsley."

General Parker replied in part as follows:

"We were all very fond of Lieutenant Kelly. I was present in the Camp at San Antonio when he was killed and attended his funeral. He was buried in the picturesque little national cemetery reserved for officers and men of the United States Army on the outskirts of San Antonio in the park reserved for officers. He was one of the first heroes of our military aviation service who lost their lives in the service of their country. He lost it in a heroic way and his memory is cherished among us. As Commander of the Department of Texas, I was very glad to have the opportunity of naming this great aviation field of twelve thousand men, the largest I think in the United States, after Lieutenant Kelly.

Very sincerely yours,
James Parker,Major General,N.A."

The original letters quoted above were contributed to Kelly Field by Mrs.Ronald T. Tyman of Waltham, Massachusetts, the daughter of General Parker, who located them among the personal effects of her father after his death.

By December, 1917, there were over 1100 officers and 31,000 enlisted men at Kelly Field. At that time individuals were being trained to form the nucleus for several other aviation establishments being begun at that time.

Cadets began to arrive in January, 1918, when 593 were undergoing training. As the aviation training activities increased and the other fields became established, fewer enlisted men were undergoing training at Kelly Field, and by October,1918, there were 680 officers, 17,000 enlisted men, and 363 cadets present at the field.

After the Armistice, many changes were made while the field was being placed on a peace-time status. General Orders No. 112, War Department, dated September 15, 1919, titled "Military Education in the Army", ordered the establishment of Army schools, such as post, unit, special and general service schools; and General Orders No. 7, War Department, dated January 30, 1920, designated two schools for the Air Service: "Air Service Pilots School", at March Field, California, and Carlstrom Field, Florida; the object being to standardize instruction and training of the officers in the tactics and technique of this arm of the service. In March, 1920, General Orders No. 18, War Department, designated Kelly Field as the Air Service Mechanics School.

In January, 1921, the following organizations were at Kelly Field: First Wing, consisting of 2nd Air Park, 5th Air Park, First Day Bombardment Group, and First Pursuit Group. In February of that year, the First Day Bombardment Group was redesignated the Second Bombardment Group, and in June the First Pursuit Group was transferred from Kelly Field to Ellington Field. In July, the First Surveillance Group was transferred to Kelly Field, Flight "A" coming from Fort Bliss and Flight "B" from Marfa, Texas. In September, the Third Attack Group was organized at Kelly Field and consisted of the 60th Service Squadron, the 8th, 90th, 13th, and 26th Attack Squadrons, and the 16th Photo Section.

In June, 1922, the 10th School Group was organized at Kelly Field, consisting of the 39th, 40th, 41st 42nd and 43rd School Squadrons, the 13th Air Park, the 22nd Photo Section, and the 10th Group Detachment, the Second Bombardment Group being transferred to Langley Field, Virginia. On September 30th, Kelly Field was designated a permanent military flying field by War Department General Orders No. 39.

Comparatively few changes occurred until January, 1926, when Kelly Field was reorganized into the Air Service Advanced Flying School, in accordance with Personnel Orders No. 306, War Department, Office of the Chief of Air Service. The School was divided into the School Headquarters, the Academic Division, the School Troop Division, and the Services. The Third Attack Group, consisting of 18 officers and 341 enlisted men, was transferred to Fort Crockett, Texas, on June 30, 1926.

On August 1, 1927, the 24th School Wing was organized, consisting of the Tenth School Group at Kelly Field, the Eleventh School Group at Brooks Field, and the Thirteenth School Group at March Field.

Except for changing the name of the school to the Air Corps Advanced Flying School, few changes occurred until July 15, 1931, when the Tenth School Group and Tenth School Group Headquarters, less the component units, were demobilized.

In October, 1931, the 24th School Wing was transferred to the Air Corps Training Center, Randolph Field, Texas.

The organization of the Advanced Flying School remained practically the same until March 1, 1935, when a reorganization established the following units at Kelly Field: ACAFS Detachment; 22nd Photo Section; 39th Observation Squadron (C & A); 40th Attack Squadron; 41st Observation Squadron (LR Amph); 42nd Bombardment Squadron; 43rd Pursuit Squadron; 68th Service Squadron, and 81st Service Squadron. The underscored organizations have been detached from the GHQ Air Force and are on temporary duty at this field in connection with student training.

TRAINING

Since the reorganization of Kelly Field into the Air Service Advanced Flying School, which occurred in June, 1922, there have been in effect two general systems of instruction. During the use of the first system, students received both basic and specialized training at the Advanced Flying School. Basic training was given by means of the stage system of instruction, the principal stages being dual, solo, accuracy, hurdles, eights, 180- and 360-degree turns, performance, night flying, cross-country, formation, etc. After about twelve weeks had been devoted to basic training, students were divided into sections for about ten weeks of specialized training in attack, bombardment, observation, or pursuit. Two classes were graduated annually, each spending approximately six months at the Advanced Flying School.

The majority of classes under this system of training used airplanes of war-time design, consisting principally of DH4B's, MB3A's, SE-5's and NBS-1's. Before this system of training was discontinued, O1's, O2's, AT-4's, AT-5's and O2-H's were also being used. Due to a temporary shortage of airplanes of a given type, it was sometimes necessary to suspend specialized training for that branch of aviation.

Ten classes were graduated under this system of training. The first entered on July 15, 1922, and the last graduated in February 1928. A total of 865 students entered during this time, of whom 16 were killed, 26 were held over for instruction in the class to follow, 276 were eliminated for deficiencies in flying, 67 were eliminated for other causes, and 480 were graduated.

In March, 1928, a new plan of training was adopted as a part of a five-year program initiated for the purpose of graduating and commissioning more students from the flying school. This plan is known as the "B" system of training, under which only advanced or specialized training is given at the Advanced Flying School. This training closely resembles the specialized training given under the old system of instruction, and requires an average of four months per class for its completion. Instrument flying for a nucleus of instructors was initiated in 1930. No. 7-B (March to June, 1930) received some instruction therein but, due to equipment delays and difficulties all members of the class did not get the full course. Class No. 8-B (July to October, 1930) received the full course in instrument flying.

The airplanes used at the present time are A3B's for attack; B3A's and B5A's for bombardment; O-19's and O-25's for observation; P-1's, P-12B's and P-12D's for pursuit; and BT's for instrument flying.

Twenty-three classes have graduated under the "B" system of training, during which a total of 2051 students have entered, of whom 38 were killed, 63 held over for instruction in the class to follow, 3 eliminated for deficiencies in flying, 23 eliminated for other causes, and 1924 graduated. The average size of the classes entering under this system has been 89 students as compared to 86 under the old system.

An interesting comparison of the results of the two systems of training is obtained by reducing the number killed, held over, eliminated, and graduated under each system to a percentage basis:

System of Training	Students Entering	% Killed	% Held Over	% Flying Eliminations	% Other Eliminations	% Graduated	No. Graduated
1922-28 (old)	865	1.8	3.0	31.9	7.8	55.5	480
1928-35 (new)	2051	1.85	3.1	0.15	1.1	93.8	1924

The difference between the eliminations under the old and the new systems of training, as listed in the above table, is principally due to the fact that basic instruction was discontinued at the Advanced Flying School with the beginning of the new system of training. A considerable portion of the improvement, however, is due to higher entrance requirements, better equipment and methods of instruction, and additions to the courses given.

Ground training has kept pace with flying training. Methods of instruction have been improved and now include the use of sound motion-picture film. Subject matter has been continually improved and courses added; technical and theoretical subjects have been reduced and practical instruction that the student must apply immediately upon graduation has been substituted. For example: the courses in bombs, explosives, and radio theory have been reduced, while the time devoted to instruction in squadron duties of junior officers has been more than doubled.

Since the standard for entrance to the Primary School has been raised to a minimum of two years' college education, or the equivalent, very few of the students have any difficulty in satisfactorily completing the ground-school course.

Lectures on the new developments in materiel and equipment, and on the GHQ Air Force, are given each class in order to acquaint the students with the latest developments of the Air Corps.

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WORK COMPLETED ON CENTRAL AMERICAN BOUNDARY SURVEY

By Lieut. J.D. Underhill, Air Corps

Ten months of tedious work on the Central American boundary survey was recently brought to a close. This work was undertaken by the 12th Photo Section, France Field, Panama Canal Zone. Last January, Major Willis R. Taylor, Air Corps, accompanied by Sergeant Edwards, departed for Salvador, Central America. Their task consisted of three separate jobs; an aerial survey of the boundary between Guatemala and El Salvador, one of the Special Boundary Tribunal of Guatemala and Honduras, and a survey of a common zone to all three countries. Because of the excellent weather and flying conditions, the job was flown in the remarkably short time of eight days. The men back at the photo section did more than their bit by working day and night to develop the films and return test prints by air mail to Major Taylor.

To photograph the whole project, it took 600 miles of flying over very rugged and mountainous country. Approximately 1400 exposures were required to cover the 482 photo miles flown. To complete the project, 17,104 actual prints were made, not including 800 testprints.

Mr. Sidney H. Birdseye, Comision Tecnica de Demarcacion of Chiquimula, Guatemala, who is handling the ground survey, paid the 12th Photo Section a visit shortly after the project was flown. It was a pleasure to work with him and his brother, Mr. C.H. Birdseye, Chief of the Division of Engraving and Printing in Washington, on such an important mission.

The work was interesting and provided valuable experience to all concerned.

RANDOLPH FIELD AS I SAW IT

By 2nd Lieut. John A. Way, Air Reserve

RANDOLPH Field is the goal of almost every air-minded youngster whose ambition is flying. They see Randolph Field in their dreams of flying and of becoming one of the Army Air Corps pilots. To a selected few this dream comes true - in my case it did.

I was in the second class to begin training at Randolph Field, the "West Point of the Air." No sooner had I arrived at the gates than the reason of that title was made clear to me. As well as learning to fly there were other things to be learned, and the first of these was discipline. For the first two weeks we did close order drill for fifty minutes out of every hour, with a ten-minute rest period, for ten hours a day. We were each issued an Army model Springfield rifle - I began to wonder - was I in the right branch to learn to fly? For those first two weeks we didn't see an airplane. It was explained to us that we were to be put in condition before we started our flight training. By the time that period of training was over we were almost fit to meet a Sullivan!

We were issued our clothing, which had to be folded a certain way, placed in a particular spot in our lockers and kept in order at all times. Our tailor-made uniforms had to be kept spotless and creased. Our hair must be trimmed so often the barbers must have felt guilty - our nails clean - and our faces cleanly shaven at all times. We had to keep our bunks made and our rooms spotless at all times. The brass buckles on our uniforms must shine like burnished gold at all times. For this first two weeks' period we were not permitted to leave the cadet area.

At the end of two weeks we were marched to the Primary Stage hangar line, where we had our first chance to inspect the planes we were to learn to fly. We met our instructor, drew our flying equipment, and were assigned lockers. The same day we started our ground school courses. We were to spend the mornings at the hangar line and our afternoons in ground school. Subjects pertinent to flying were given - radio, engine mechanics, navigation, meteorology, etc., were studied.

We flew "dual" with our instructor for the first few hours in the primary trainer planes. He went through the primary maneuvers over and over - what patience those instructors have! We did banks, stalls, spins, take-offs and landings, and forced landings by the dozens. After about seven hours of dual time I soloed. I think the thrill of that first solo has never been equalled in my flying career. I was master of the whole world, in my own mind, when I took that PT off the ground. Randolph Field had always looked pretty big - but now it assumed the proportions of a postage stamp. That empty front cockpit seemed awfully large! But that first landing worked, and it established confidence in myself and my ability to fly. Now I was permitted to wear my goggles on my helmet instead of around my neck.

For the first four months we were under the guidance and jurisdiction of the "Upper Class" who were the cadets in the second or "Basic" training stage. To them we were ignorant "Dodos" (a species of bird that is unable to fly). Their wishes were commands. If they wished anything - a poem to be memorized or dramatized - a submissive "Dodo" was called upon. The Upper Class were highly respected, even worshipped - they had successfully survived the hazardous "washing out" period of training! We were allowed only three answers: "Yes Sir!", "No Sir!" and "No excuse Sir!" We were served after they had had the choice morsels from the platters, and we in turn acted as Jesters for their amusement at the table.

After the first four weeks were over we were granted more privileges - we were allowed to go into San Antonio on Saturdays and had Wednesday afternoons off to do as we liked. Life became much more pleasant for us. A Cadet is at once accepted into a high social life in San Antonio.

During that first four months of training more than 50% of my class, in which 203 cadets started training, were "washed out" and sent home. One of the saddest things at the training school is to see fellows "wash out." They are heart-broken when they see the goal of their ambition - their fondest dreams - fade and disappear. Fifty percent is the average to finish the Primary stage of flying.

For the second four months of training we moved to the opposite side of the field and started flying the Basic Training ships - "BT's" we called them. They are a larger and much nicer airplane to fly. In addition to the flying that we did on Primary stage, we did formation and cross-country flying. It was now our turn to direct the new "Dodos" - to sit at the head of the table - to be served first! We learned to keep a stern face and command: "Wipe that smile off, Mister!"

Finally, the day came for us to leave Randolph and go to Kelly Field. It was a great day, yet everyone of us hated to leave. We hold Randolph Field pretty close in our hearts, and are proud of the fact that we can say: "I was trained at RANDOLPH FIELD, the 'West Point of the Air.'" We realize that we received at Randolph Field the ultimate in training to become one of the pilots in Uncle Sam's Army Air Corps.

Lieut. Way, a native of Prague, Okla., and a graduate in 1931 of the University of Oklahoma (B.S.), graduated from the Advanced Flying School, Kelly Field, Feb. 24, 1933, specializing in Pursuit. He was rated "Airplane Pilot" and commissioned a second lieutenant, Air Reserve. Assigned to active duty, he served at Selfridge Field, Mich., for two years. He is now stationed at Bolling Field, D.C., having recently enlisted as a Private in the Air Corps, in order that he may be on a priority status in the event examinations are held for appointment of additional second lieutenants in the Air Corps, Regular Army.

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VALUABLE LESSONS IN MIAMI AIR MANEUVERS

The recent GHQ Air Force maneuvers in the State of Florida were productive of valuable information. The organization of the fighting planes of the Air Corps into one large striking force with great strategic value left many important problems to be solved. The maneuvers provided the answer to some of these and pointed the way toward the solution of others.

The point was demonstrated that barring adverse flying weather, the entire GHQ Air Force can be concentrated in any part of the United States within 24 hours if two main conditions are fulfilled. First, there must be proper advance preparations of ground facilities; and second, the entire logistics branch of the Air Service must be studied and reconstituted.

The first problem, that of having proper landing and airdrome installations at the main strategic centers of the nation will be solved when money becomes available for carrying out the provisions of the Wilcox Bill, passed at the last session of Congress. This legislation authorized the purchase of these strategic and tactical locations. A survey is in progress and the plan now waits for the funds which will put it into being.

The second difficulty, that of organizing effectively the supply, repair, station complement crews, etc., is an involved situation requiring special study and adjustment that will affect the whole Army structure. The personnel question alone must be worked out as a new military problem.

One thing that stood out above all others was that, while the Air Force is the most mobile and effective of the new engines of war; its service, care and supply increases greatly as its size is augmented. And the complexity involves not only the Air Service itself but the whole personnel and supply organization of the Army. Tactical use of small air formations is a relatively simple matter, but combined strategical and tactical use of large fleets is going to demand much preparation.

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N.A.A. TO HOLD ANNUAL CONVENTION

Senator William G. McAdoo, President of the National Aeronautic Association, has announced that the annual convention of the Association will be held January 6th and 7th at the Mayflower Hotel, Washington. Delegates will be present from all sections of the country. Sessions will be held both days, with a dinner in the Chinese Room of the hotel on the evening of January 6th.

Of special interest this year is a report to be presented by Major James H. Doolittle, the noted flyer, as chairman of a special policy committee. Speakers on Major Doolittle's program are: Major-General Oscar Westover, Chief of the Army Air Corps; Rear Admiral Ernest J. King, Chief of the Bureau of Aeronautics, U.S. Navy; Richard S. Boutelle, State Co-ordinator, U.S. Bureau of Air Commerce; Mabel Britton, President of the 99 Club of women pilots; Oliver C. Parks, President of the Parks Aviation School; Thomas A. Morgan, chairman of the board, Curtiss-Wright Corporation; Walter Beech, President, Beech Aircraft Company; Fred L. Smith, Director of Aeronautics, State of Ohio; C.R. Smith, President, American Airlines; Dr. Roy E. Whitehead, Chief of the Medical Section, U.S. Bureau of Air Commerce; Col. Harold E. Hartney, Technical Adviser, Senate Sub-Committee on aircraft investigation; William Rochford, St. Paul, Minn., business man; Col. J. Monroe Johnson, Assistant Secretary of Commerce.

Senator McAdoo will speak at the dinner and preside at each session. Other speakers at the dinner are expected to be George S. Wheat, vice-president of United Aircraft and Manufacturing Company, and Fred D. Fagg, Chicago, Secretary of the National Association of State Aviation Officials. Holders of international records during 1935, numbering among them the nation's foremost flyers, will be honored at the dinner. Each will receive a certificate attesting his achievement from the Federation Aeronautique Internationale, of Paris, the official sporting body of the world.

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Three Materiel Division representatives visited the Sperry Gyroscope Co., Brooklyn, N.Y., on December 2,3 and 4, 1935 (making the flight there in a B-12A Martin Bomber, equipped with an automatic pilot), for the purpose of testing and discussing various details of the improved control units for the automatic pilot. A report thereon is being written.

THE Air Corps is delighted with the Christmas present it received in the appointment of Brigadier-General Oscar Westover as Chief of the Air Corps: Having been on the job for more than three months, during General Foulois' absence on leave, there will be no disturbance in administrative procedure. Of course, now that full responsibility falls upon him, General Westover may be expected to initiate some policies of his own.

The new Chief has many distinctions. He is one of the very few officers who served as an enlisted man in the Regular Army and is also a graduate of West Point. He is one of only about 35 officers holding all four Air Corps flying ratings. He is a National Elimination Balloon Race winner, having made one of the longest and swiftest balloon flights on record - 866 miles from Milwaukee, Wis., the starting point, to Lake St. John, Quebec Province, Canada, in 16½ hours. That same year, representing the United States in the International Gordon-Bennett Balloon Race, which started at Geneva, Switzerland, General Westover was eliminated through the unusual mishap of having Hungarian peasants seize his drag rope and haul the balloon to earth, with the mistaken idea that they were doing him a service.

General Westover comes to his new position with a splendid background of Air Force experience, as well as bureau service. He commanded the Air Force Maneuvers at March Field, Calif., in 1933; and commanded the Air Force in 1934, when it participated in the General Headquarters Command Post Exercises in the East which were commanded by General MacArthur.

With the duties devolving upon his new position assuming greater proportions in view of the recent air-minded trend on the part of the people of this country and of Congress, and of their realization of the important role the Air Force is destined to play in any future emergency, General Westover faces great responsibilities which, in view of his all-around experience and his past success in performing the most arduous tasks, he may be expected to meet capably.

The best wishes of the Air Corps are extended to him for a highly successful administration.

Reginald M. Cleveland, aviation writer for the New York Times, had this to say regarding the new Chief of the Air Corps:

"With the appointment of Major Gen. Oscar Westover as Chief of the Air Corps, announced on Christmas Day, that service is assured of the leadership of an officer of wide popularity and varied experience. He holds four aeronautical ratings, having earned those of Airship Pilot and Balloon Observer in addition to those of Airplane Pilot and Aerial Observer. Born in West Bay City, Mich., in 1883, General Westover served as an enlisted man in the Corps of Engineers before his appointment to the Military Academy, from which he graduated in 1906. After service in the Infantry, he was transferred to the Signal Corps in 1917.

Lighter-than-Air has enlisted the sympathetic interest of General Westover. He graduated from the Balloon School at Ross Field, Calif., in 1921, and the Airship School the following year. He won the National Elimination Free Balloon Race at Milwaukee in 1922, and was the Army entrant in the International Balloon Race at Geneva later that year. After acting as director of Aircraft Production, he graduated from the Advanced Flying School at Kelly Field. He became the Commanding Officer at Langley Field and Commandant of the Air Corps Tactical School located there. After two years in this post, he entered the Tactical School as a student, graduating in 1927. His next school tour was at the Command and General Staff School at Fort Leavenworth, Kan., where he remained as a member of the faculty after graduation.

General Westover brings to the Air Corps a balanced experience in tactical, staff, procurement and active flying background. His appointment augurs continued progress for a well-rounded army air arm."

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PROMOTION OF GHQ AIR FORCE CHIEF

On the recommendation of the Chief of the Air Corps and the Chief of Staff, General Malin Craig, the Secretary of War has advanced Brigadier-General Frank M. Andrews, Chief of the General Headquarters Air Force, to the temporary rank of Major-General.

This promotion is in line with the desire of the Secretary of War to give to the GHQ Air Force greater rank in the tactical scheme of the Army and place it in its proper relative position with the other combat organizations which are now commanded by Major-Generals.

During the coming year, according to War Department announcement, the GHQ Air Force will be reinforced by the addition of over 500 combat planes, and the advancement in rank of its commander was considered by the Secretary of War to be commensurate with the growing size and importance of the combat forces of the Air Corps. General Andrews' promotion became effective on December 27, 1935. This added recognition of the importance of the GHQ Air Force meets popular approval.

G.H.Q. AIR FORCE

All squadrons of the Third Attack Group at Barksdale Field, La., conducted night operations during the period November 1st to 15th, stress being placed on two-hour night navigation flights for those pilots not having completed this phase of training and on unit night navigation missions. Very little was accomplished, however, due to poor weather conditions during this period.

During November, the 8th Attack Squadron conducted firing on the 1,000 inch Machine Gun Range, a part of the training required by Revised T.R. 440-40 for Rear Seat Gunners, for all their enlisted gunners. In addition to this, Gunnery and Bombing for pilots' qualification were conducted with only one mishap. First Lieut. W.C. Sweeney was forced to land on the gunnery range when his motor quit. He sustained no injury, nor was the airplane damaged, which was very fortunate considering the nature of the terrain on this portion of the reservation.

The 13th Attack Squadron conducted their bombing training for pilots during the early part of November, and on November 14th departed for Chapman Field, Miami, Fla., with 12 pilots and 26 enlisted gunners in nine A-12's and three Cargo airplanes for the purpose of qualification of rear seat gunners on towed targets. A very successful season was reported, with the exception of the fact that they arrived at Chapman Field on the tail end of a hurricane and found the field and tent frames in a rather poor condition. All gunners were qualified as expert, the highest score, 1565 out of a possible 1900, being made by Private O.C. Jones.

The 90th Attack Squadron completed their gunnery and bombing for pilots' qualification, and on the 23rd departed with twelve pilots and twenty-six enlisted gunners in nine A-12's and three Cargo airplanes for Chapman Field for training, the men and the airplanes moving to Fort Pierce, Florida, on December 1st for the GHQ Air Force concentration. On December 1st, seventeen A-12 airplanes of the 90th Squadron, borrowed from the other tactical squadrons of the Group, piloted by 17 pilots of the 3rd Attack Group, departed for Fort Pierce, Florida, for the purpose of participating in the GHQ Air Force Concentration in Florida. After the 90th Squadron (with all its attached airplanes) had departed for the concentration area, there was only one A-12 airplane left at Barksdale Field.

ARMY AMPHIBIAN MAKES RECORD FLIGHT

Three Air Corps pilots and a crew of three enlisted men established on December 12th a record in distance and speed for a YOA-5 Douglas Amphibian plane on a test flight from San Juan, Porto Rico, to Chapman Field, Miami, Fla.

The giant plane, in command of Captain A. Y. Smith, took off from the bay at San Juan, Porto Rico, at about 6:30 a.m., and arrived at Miami at 1:53 p.m., having covered a distance of 1,056 statute miles at an average speed of 146 miles an hour. The total elapsed time for the flight was 7 hours and 26 minutes.

U.S. Army GHQ Air Force officers considered the flight important from the communications standpoint. Colonel C.W. Lewis, Signal Corps, stated that "the flight proved that the airplane can be of great value in going great distances to sea and report back activities of enemies to places where those reports can do the most good."

Major Charles H. Howard, Communications Officer of the GHQ Air Force, declared that "the entire flight was really a test of our ability to communicate with the land forces. The results were highly gratifying."

The flight from San Juan was made without trouble of any kind, and Captain Smith was reported as stating that enough fuel remained in the tanks of the Amphibian for a further flight of about 5½ hours.

Officers and men who made the flight, other than Captain Smith, were Lieut. H.F. McCaffery, navigation officer; Lieut. Haywood S. Hansell, engineer officer; Corporal John McKenna, crew chief; Privates Ralph Miner, assistant crew chief, and Charles J. Archer, radio operator. Lieut. Hansell is stationed at the Air Corps Tactical School, Maxwell Field, Ala., while the other officers and men are members of the GHQ Air Force at Langley Field, Va.

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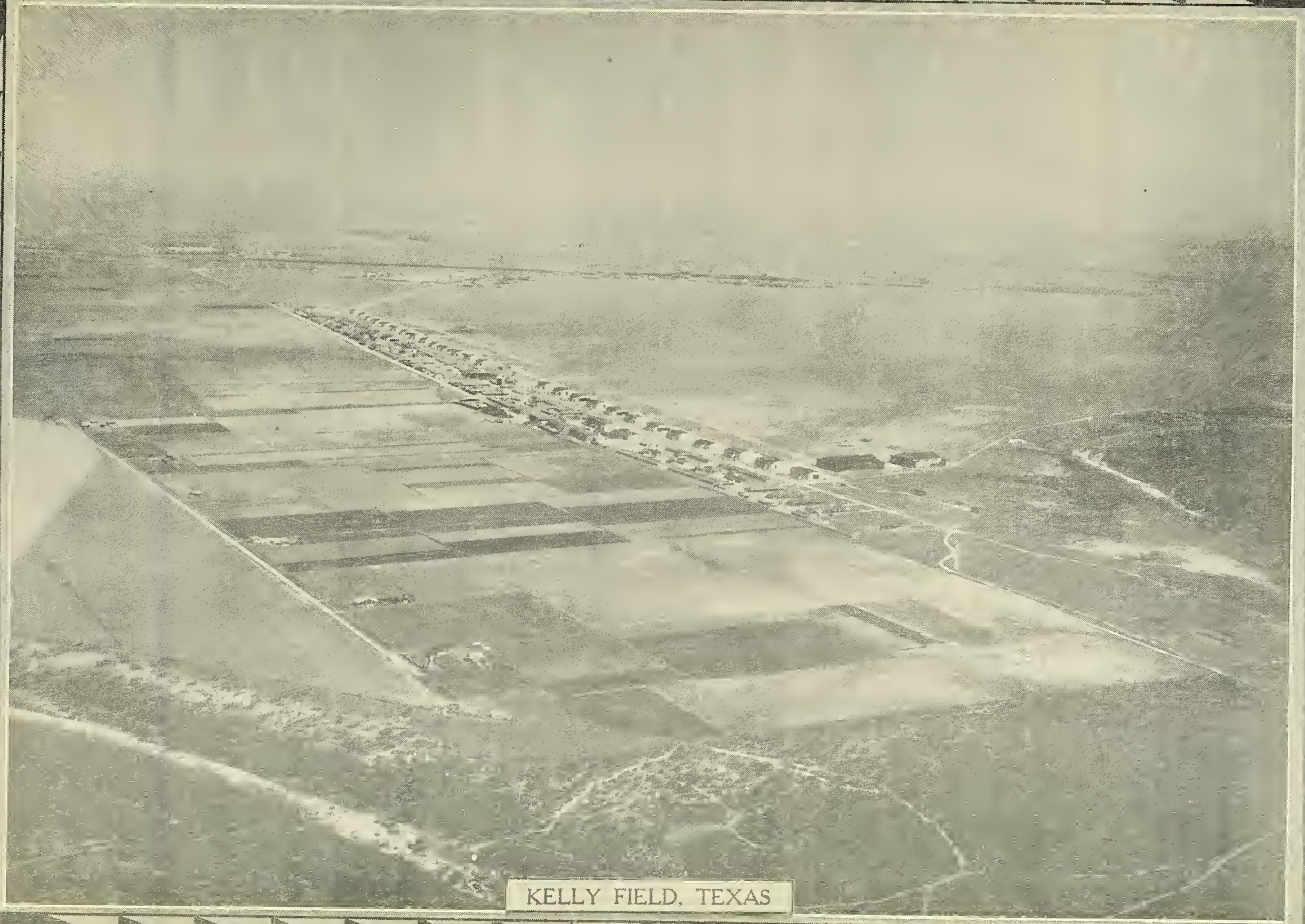
Lieut.-Colonel Ralph Royce, Commanding Officer of the First Pursuit Group, Selfridge Field, Mich.; Major Edwin J. House, Commanding Officer of the 94th Pursuit Squadron; Major George P. Tourtellot, Commanding Officer of the 17th Pursuit Squadron, and Major Alfred A. Kessler, Jr., Commanding Officer of the 56th Service Squadron, all of Selfridge Field, acted as observers of the Second Wing, GHQ Air Force, concentration at Miami, Florida. They departed on their southward flight on December 5th, piloting P-26A airplanes.



KELLY FIELD, TEXAS

AIR CORPS

NEWS LETTER

ISSUED BY OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT WASHINGTON, D.C.

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Vol. XIX No. 2

VOL. XIX AIR CORPS NEWS LETTER NO. 2.

Information Division
Air Corps
January 15, 1936
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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GREETINGS TO THE OFFICERS AND MEN OF THE AIR CORPS

Ed. Note: It is regretted that this message from Mr. McSwain, Chairman of the House Military Affairs Committee, was received too late for publication in the January 1st issue of the News Letter.

On this January 1, 1936, I am sending my greetings and good wishes to the officers and men of the United States Army Air Corps. I do not fail to think of the officers and men in the armed services, such as the ground force of the Army, the Marine Corps, and the Coast Guard. But since the Air Corps is in fact "our first line of defense," and therefore must be instantly ready at all times to perform its great mission of beating off and beating down any attempted invasion of our country, I confess an unusual interest in this new branch of the Service.

I have not suggested anywhere that other agencies and instrumentalities of defense may be discarded or neglected. Progress and improvement in the instrumentalities of warfare do not bring about substitutions for old agencies, but merely cause additions to them and thus a general increase in the number and kinds of weapons. But with an adequate and properly equipped and trained air force, coupled with our Navy and the Naval Air Force, we can relax somewhat as to land forces. Since our sole purpose in maintaining military establishments is to insure defense, we believe that the Air Corps and the Navy can so retard and hold back the initial stages of any possible invasion as to give us time to fill in the skeletonized organizations of the Regular Army, and to recruit the National Guard up to war strength and to man the Organized Reserves with the unorganized militia, and to train these three groups of land forces so that invasion will be prevented, and if not actually prevented, the invader may be promptly driven from our borders and punished as a warning for all time to all peoples.

The charm of adventure and a pioneer spirit are always with the Air Corps. For her officers and men there are no dull, monotonous days of peace. The desire for progress, the craving for greater speed, the hunger for higher altitudes, the longing for new records in all lines, these are the every day experiences of the officers and men of the Air Corps. They stimulate the greatest energy and activity, they maintain the highest degree of morale, they preserve esprit de corps, they make ability to achieve the measure of reward, and they fuse and cement the personnel of the Air Corps, irrespective of rank, or the absence of rank, into one great fellowship of cooperation and mutual good will.

All honor to these modern knights. Hats off to this present-day chivalry. May the year 1936 witness accomplishments, see a finer, nobler spirit of public service, and thus bring happiness and contentment to the officers and men of the "first line of our Nation's defense."

JOHN J. McSWAIN.

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SECRETARY OF WAR VIEWS VOLCANIC ERUPTION FROM AIRPLANE

To the 5th Composite Group, Luke Field, Hawaii, went the distinction and honor of furnishing a special flight of airplanes to carry the Secretary of War and members of his party over Mauna Loa to observe the recent lava eruption.

The flight was commanded by Major Lucas V.Beau,Jr., and included Captains Charles F. Born, Fay R. Upthegrove,Lts. Daniel A. Cooper, Byram A. Bunch and Carlyle W. Phillips.

Two Bombardment planes of the 72d Bombardment Squadron and one Observation plane from the 4th and 50th Obs. Squadrons, escorted by the Amphibian from the 4th Obs. Squadron,composed the flight.

The flight proceeded to Hilo on December 4th, and Major Beau reported to the Secretary of War on board the USS CHESTER. The following morning the flight was promptly organized and took off, the Secretary flying with Major Beau in an O-19. Excellent conditions prevailed, and all planes circled over the flow at 9,000 feet while many pictures were taken.

Wishing to see everything, the Secretary requested Major Beau to carry him over the crater of Mokuaweowo at the top of the mountain, nearly 14,000 feet above the sea. The plane flew through a light flurry of snow at the summit. After discharging their passengers at Hilo, all airplanes returned to Luke Field the same afternoon.

THE ARMY AIR CORPS FOR 1935 - A REVIEW

Ed. Note: The review of Air Corps activities and various aeronautical events of the year with which this branch of the service was associated, as hereinafter given, is by no means a full and complete chronology thereof. The time necessary to conduct the required amount of research work in order to compile such a complete chronology has not been available and, furthermore, space is lacking for the publication of a more lengthy report.

No attempt has been made in this chronology of Air Corps events to review the activities of the Air Corps Materiel Division, Wright Field. This will be covered in the next issue of the News Letter in an article by Brigadier-General A. W. Robins, Chief of the Materiel Division.

The cover page for this issue of the News Letter gives some inkling of various events which transpired within the Air Corps during the calendar year 1935. The illustration at the top left serves as a reminder of the mid-winter test flight during February, conducted by a provisional squadron equipped with a varied assortment of service type airplanes.

Next is the stratosphere balloon in which Captains Stevens and Anderson accomplished a world's altitude record. We then see the President congratulating Major Albert F. Hegenberger, who was awarded the Collier Trophy for his pioneering work in instrument flying and landing. The Caterpillar Club book speaks for itself. News Letter readers are already familiar with the outside appearance of the Army Aeronautical Museum at Wright Field, completed last year. The Army Airship TC-13 is flying across the continent from Langley Field to its new home at Sunnyvale, Calif. General Arnold is standing beside the Mackay Trophy, awarded him for the second time in his career as an Army pilot. The well-known figure of Major-General Benjamin D. Foulois, pioneer Army flier and until recently Chief of the Air Corps, brings a feeling of regret over the departure from active duty to private life of a man who practically started the aviation branch of the Army. Best wishes go to him in his well earned retirement.

The young man must also have his inning, and the next "shot" is that of Captain Karl G.E. Gimmler, who won the 1935 Mitchel Trophy Race. Lack of space does not permit an adequate representative display of the air force of the GHQ, so the airplanes on the line will have to suffice. The Army planes flying away from Rockwell Field and the arrival of the Navy plane denotes the interchange of air stations between the Army and the Navy. The last sketch hardly needs any explanation save to add that it has tended to bolster the morale of Air Corps commissioned personnel.

The year 1935 witnessed unusual strides in the development of our national aerial defense system. There was a reorganization of Air Corps units, following the creation on March 1st of the GHQ Air Force. In the interests of mobility, all units thereof were reduced to the minimum personnel - in short, a fighting force lending itself to rapid concentration at any desired point in the United States in a minimum time. The maneuvers of the GHQ Air Force in Florida early in December, touched upon elsewhere in this issue of the News Letter, furnished a striking example of the rapidity with which this force can be assembled.

Flying personnel received more intensive training, and the number of hours of specialized training in instrument flying, aerial navigation and night flying was materially increased. A definite standard of flying proficiency, established for all Army pilots, was productive of excellent results. The use of all aids to navigation, such as radio facilities, including the radio beam, was encouraged at every opportunity. Training was accelerated in aerial gunnery, bombing and navigation. Tactical maneuvers, embodying missions of a varied character, were frequently held in order to develop new and better means of employing our air forces. Mass movements were made by night and day, during which problems of supply as well as tactics were studied. Certain maneuvers were so arranged as to enable tactical units to participate also in aeronautical events of national importance, thereby making it possible for the general public to observe progress made in military aircraft.

There was a marked advance in the design, construction and performance of aircraft of all types. Performance tests on different types of aircraft were conducted at the Materiel Division at Wright Field, as a result of which contracts were placed with different manufacturers for airplanes definitely superior than any heretofore used. In general, the new combat type airplanes are of all-metal, low-wing monoplane construction, which will not only step up the speed attained but add many hours to the life of each, as well as reduce maintenance requirements.

Of considerable significance, possibly leading to revolutionary changes in air tactics, is the remarkable advance recently made in speed, cruising range and load-carrying capacity of new Bombardment type airplanes. A recent competition among manufacturers of airplanes of this type greatly stimulated this development. In Attack type of aircraft, orders were placed for single-engined all-metal planes incorporating newly designed features. Flaps so reduce the landing speed as to make possible the use of ordinary sized airports. A new retractable landing gear streamlines neatly into the wings during flight, increasing cruising speed. A reinforced fuselage reduces the hazard of a landing made in an emergency, without lowering the wheels. An outstanding development of the year was that of a 4-engined airplane by a leading manufacturer. Its delivery flight of 2100 miles non-stop at an average speed of over 200 miles per hour indicates its capabilities.

Always ready to extend its cooperation in projects having for their purpose the advancement of scientific knowledge, the Air Corps cooperated with the National Geographic Society in sponsoring a balloon flight into the stratosphere. On Armistice Day, Captains Albert W. Stevens and Orvil A. Anderson, Air Corps, piloting the world's largest balloon, attained an altitude of 72,395 feet for a world's record. As a result of this 14-mile ascension into the stratosphere, extremely interesting and valuable additions to the world's scientific knowledge has been gained.

PERSONNEL - APPOINTMENTS

Lieut.-Colonel Augustine W. Robins was appointed Brigadier General and Assistant Chief of the Air Corps for a period of four years, from January 1, 1935, and was assigned as Chief of the Materiel Division, Wright Field.

The GHQ Air Force officially came into being on March 1, 1935. Lieut.-Colonel Frank M. Andrews was designated as commander thereof with the temporary rank of Brigadier-General. On December 27th, he was promoted to the temporary rank of Major General. The temporary rank of Brigadier-General was also conferred upon Lieut.-Colonels Henry H. Arnold and Henry C. Pratt, Air Corps, who were designated as the commanders of the 1st and 2nd Wings, respectively. Lieut.-Colonel Gerald C. Brant was designated as commander of the 3rd Wing, with the temporary rank of Colonel.

Of the approximately 475 candidates who took the examination in April for permanent commissions, 40 enlisted men of the Air Corps and two Air Reserve officers were appointed second lieutenants in the Air Corps, Regular Army, with rank from June 30, 1935. On Aug. 1, 1935, ten additional appointments were made, making a total of 52 new Air Corps officers added to the commissioned personnel, not including West Point graduates successfully completing the course at the Air Corps Training Center.

Brigadier-General Oscar Westover was appointed, on December 24th, Chief of the Air Corps, with the rank of Major-General, for a period of four years, succeeding Major-General Benjamin D. Foulois, retired.

Brigadier-General Henry H. Arnold was appointed Assistant Chief of the Air Corps, with the rank of Brigadier-General, for a period of four years, beginning December 28th.

DEDICATION OF HAMILTON FIELD

Nearly 20,000 people witnessed the official dedication of the new Air Corps post, Hamilton Field, San Rafael, Calif., on May 12th. General Arnold, 1st Wing Commander, gave a very impressive talk on the mission of the Wing in protecting the San Francisco Bay districts.

There was an aerial review of 30 planes of the 7th Bombardment Group, led by Lieut.-Col. C.L. Tinker, also a demonstration of parachute jumping. This field was named in honor of 1st Lieut. Lloyd Andrews Hamilton, who was killed in action near Lagnicourt, France, August 26, 1918.

NAMING OF LANDING FIELDS

Announcement was made on May 21st of the naming of an area of more than 2500 acres of land, near Fort Kamehameha, Hawaii (designated as Tracts "A" and "B") as "Hickam Field," in honor of Lieut.-Colonel Horace M. Hickam, Air Corps, who was killed in an airplane accident at Fort Crockett, Texas, November 5, 1934.

FRONTIER DEFENSE BASES AUTHORIZED

On August 9th, the President signed the Bill, H.R. 4130, sponsored by the Hon. J. Mark Wilcox, Member of Congress from Florida, authorizing the Secretary of War to locate and establish for the use and occupancy of the Air Corps additional air bases in strategic areas.

NEW DIVISION IN OFFICE OF CHIEF OF AIR CORPS

On July 1st, there was formed in the Office of the Chief of the Air Corps, Washington, an additional Division, known as the Reserve Division, to handle all matters connected with the Air Corps Reserve, including training.

TEMPORARY PROMOTIONS

The Secretary of War approved a plan, submitted by the then Chief of Staff, General Douglas MacArthur, inaugurating a system of temporary promotions in the Air Corps, based on non-availability of officers of suitable permanent rank, and providing just reward and compensation for those performing duties and bearing responsibilities of higher rank.

NEW ORGANIZATION

A new unit, the 3rd Transport Squadron, was welcomed into the Air Corps as an active organization at the San Antonio Air Depot on July 5th, taking the place of the former 3rd Provisional Transport Squadron which had been in operation at that Depot as an embryo organization of the Air Transport Service instituted in February, 1933.

FLYING SAFEGUARDS

The Air Corps Materiel Division, in its constand endeavor to safeguard flying to the utmost, and to prevent forced landings due to fuel system difficulties, developed a device tending to insure continuous operation of the engine in the event of the failure of the pilot to "switch tanks" at the proper time. The pilot is warned by a light when the main or auxiliary gasoline supply is exhausted, but fuel is drawn from the other supply or reserve whether the pilot turns the fuel cock or not.

A new wind direction indicator, which permits easier interpretation from low altitudes and from the ground than any type heretofore in use, was designed at the Materiel Division and placed in service test at Randolph Field, Texas.

PURCHASE OF NEW AIRPLANES

During the calendar year 1935, announcements were made by the War Department of the approval by the Assistant Secretary of War, Hon. Harry H. Woodring, of the award of the following contracts for new airplanes for the Air Corps:

To the Boeing Aircraft Corporation, of Seattle, Wash., a contract for 13 four-engined Bombing planes for service test.

To the Douglas Aircraft Company, of Santa Monica, Calif., a contract in the amount of $1,235,500 for 18 two-engine Transport planes, and spare parts equivalent to two additional planes; also for 90 Bombardment airplanes at a total cost of $6,498,000, of which 82 are to be delivered by flight to tactical units and the remaining 8 sent to Air Corps depots as spares.

To the Northrup Corporation, Inglewood, Calif., a contract in the total amount of $2,560,074 for 100 Attack planes, and for spare parts equivalent to 15 additional planes.

To the Stearman Aircraft Co., of Wichita, Kansas, a contract in the amount of $243,578 for 26 Primary Training planes.

To the North American Aviation, Inc., Dundalk, Md., a contract in the amount of $559,731.80 for 42 Basic Training planes, spare parts equivalent to 3 additional planes, and for certain data.

TRAINING

During the year a total of 455 students began training at the Primary Flying School at Randolph Field, Texas, comprising 67 officers of the Regular Army, 47 of whom were graduates of the June, 1935, class of the U.S. Military Academy; 43 enlisted men, and 345 candidates from civil life. The enlisted men and civilian candidates trained under the status of flying cadets. There were three new classes during the year, one starting in March, another in July and another in October.

Graduating from the Advanced Flying School, Kelly Field, Texas, from the three classes which entered the previous year, were a total of 197 students, comprising 42 officers of the Regular Army, 30 of whom were 1934 West Point graduates; 5 officers from foreign countries and 150 flying cadets.

Early in the year, a group of 20 officers from various Air Corps posts in the United States, started a six weeks' course in navigation training and instrument flying at Rockwell Field, Calif.

Beginning March 20th, 18 Air Corps officers, serving as Instructors of National Guard Air Corps organizations, took a special course of two weeks in instrument flying at the Air Navigation School at Rockwell Field. This was in line with the policy that all National Guard Air Corps units should be thoroughly trained and equipped for flying under all weather conditions.

Brigadier-General James E. Chaney, Assistant Chief of the Air Corps, reported at Randolph Field, May 17th, and assumed command of the Air Corps Training Center.

The 2nd Bombardment Group in 26 B-6A's, 2 BT-2's and 2 PT-3's, and led by Lieut.-Colonel Charles B. Oldfield, departed from Langley Field, Va., on June 11th for Mitchel Field, N.Y., for a month's tour of duty in connection with the training of West Point cadets.

Seven Air Corps officers graduated on July 31st from the Air Corps Engineering School, Wright Field, Dayton, Ohio. Brigadier-General A.W. Robins, Chief of the Materiel Division and Commandant of this School, delivered the graduation address and presented the diplomas.

During the summer months, Air Corps Reserve officers in various sections of the country completed 14-day active duty tours. Full training schedules were carried out, each officer accumulating about 20 hours of solo flying time in service type airplanes.

Fifty Air Corps officers started the fall term on August 29th at the Air Corps Tactical School at Maxwell Field, Montgomery, Ala.

AIR MANEUVERS AND DEMONSTRATIONS

The first tangible evidence of the formation of the new 1st Wing of the GHQ Air Force appeared on March 22nd, when it held its first concentration at Hamilton Field, Calif. Brigadier-General Henry H. Arnold, Wing Commander, devised a communication problem, combined with a bombardment concentration, with accompanying Pursuit protection, with Hamilton Field as the objective. There were 76 airplanes in the concentration.

April 13th marked the largest concentration yet to be effected by the Wing. Units participating in the maneuvers were the Bombardment Groups from Hamilton and Rockwell Fields, the Attack Group from March Field and the 88th Observation Squadron from Brooks Field, Texas. Ninety tactical planes in all were present for the exercises, which lasted two days. On April 14th, in the presence of one of the largest crowds ever assembled at March Field, the units engaged in an aerial review for General Arnold. Major-General Paul B. Malone, 9th Corps Area Commander, reviewed the entire wing on the 15th.

The 7th Bombardment Group left Hamilton Field on May 20th for a ten-day period of simulated conflict over Sacramento and vicinity. Tactical problems and instrument flying were stressed in these maneuvers by the 1st Wing.

Maneuvers were held by the Wing at Mines Field, Los Angeles, Calif., for a 3-day period, beginning June 18th. There was a concentration of the Wing at Rockwell Field on the night of June 20th.

A 3-day concentration of the Wing took place at Salt Lake City, Utah, on July 22nd - 24th. The various training missions carried out were intended to stress that Salt Lake City is one of the centers from which the 1st Wing must be prepared to operate in defense of the West Coast. The airmen were afforded practice making landings in the rarefied mountain air of 5,000 ft. elevation.

Pursuit and Bombing planes from March, Hamilton and Rockwell Fields staged an "attack" on the San Diego Exposition on the night of September 6th, the airplanes dropping noise bombs, and the defending troops, the 63rd Coast Artillery, probing the night with searchlights for the speedy planes, and the provisional company of the 30th Infantry firing blank cartridges skyward. The sham battle was the climax of three days of mock air attacks, September 4th to 6th, over the Exposition grounds.

During the middle of October, the 17th Attack Group conducted maneuvers over several cities in the Imperial Valley, Calif. Bombing and aerial gunnery were held at Muroc Dry Lake.

All of the units of the Air Corps and of the Coast Artillery (Anti-Aircraft) on the West Coast participated, November 3-17, in field exercises at widely scattered points in the San Joaquin valley. A total of 131 Air Corps officers and 1348 enlisted men, with over 80 airplanes, participated in the mock air battles, as well as some 16 officers and 350 enlisted men of the Coast Artillery.

The 17th Attack and 19th Bombardment Groups staged an air demonstration at March Field on November 30th for the benefit of the Army Relief Society.

The 7th Bombardment Group conducted two weeks of mimic warfare at Merced, Calif.

2nd Wing

The 2nd Bombardment Wing, Langley Field, Va., with Major B.Q. Jones commanding, returned to its home station on February 4th, after 27 days of field maneuvers in the 4th Corps Area. Participating in these maneuvers were 93 Air Corps officers (pilots), 2 Flight Surgeons, 19 Flying Cadets and 241 enlisted men. The 81 airplanes utilized included 44 Pursuit, 29 Bombardment, and 8 Transport. The ground echelon used 42 trucks and an ambulance. Due to the shortage of airplanes, the Wing was organized in groups of two squadrons each. A total of 16 independent Air Corps camps was established, 3,753 hours were flown, 3315 convoy road miles and 2,675 air line miles were covered in Wing movements.

A composite squadron of 15 P-26A's, a BT-2B's and one C-19 of the 1st Pursuit Group, Selfridge Field, Mich., visited Benton Harbor, Mich., May 10th during the course of a tactical problem.

Pursuit tactics by an 18-plane Squadron, led by Major Rex Stoner, and a review, were staged at Langley Field on May 11th on the occasion of the visit to that field of the Assistant Secretary of War and members of the House Military Affairs Committee. The visitors were transported in two Transports piloted by Major Donald B. Phillips and Lieut. Townsend Griffiss.

The 35th Pursuit Squadron, Langley Field, with 18 planes, demonstrated, on August 3rd, Pursuit tactics to West Point cadets at Fort Benning, Ga., and on the following day gave a 20-minute demonstration of string and "Vee" maneuvers, followed by an attack on a formation of Attack planes from Barksdale Field, La. Two days prior to the Pursuit demonstration, the cadets witnessed a Bombing demonstration staged by a composite squadron from the 2nd Bombardment Group.

Selfridge Field was practically deserted during the period October 7th to 10th, when the 1st Pursuit Group, under the command of Lieut. Colonel Ralph Royce, attended a concentration of the Wing at Langley Field. All personnel and supplies were transported by air.

The 97th Observation Squadron, Mitchel Field, N.Y., towed targets at night, August 25th to 28th, to provide searchlight practice for the 62nd Coast Artillery during the First Army field training exercises in the Pine Camp area of New York.

Pilots of the 37th Attack Squadron, Langley Field, in six airplanes, gave a smoke screen demonstration on October 2nd at Aberdeen Proving Ground, Md., which was the gathering point of the Ordnance Department, members of the Society of Mechanical Engineers, and other guests, in order to witness demonstrations of all Ordnance equipment of the U.S. Army. All types of armament were demonstrated to the crowd of approximately 5,000 persons.

3rd Wing:

The 20th Pursuit Group, Barksdale Field, La., led by Lieut. Colonel Millard F. Harmon, made a controlled flight to Fort Leavenworth, Kansas, January 3rd, for the purpose of training in unit navigation and demonstrating Pursuit tactics to the Command and General Staff School.

The 20th Pursuit Group, embracing the 55th, 77th and 79th Squadrons, conducted field exercises at Tallulah, La., October 3rd and 4th.

Participating in the maneuvers at the Command and General Staff School, October 9-14, were 41 airplanes of the 20th Pursuit Group and the 90th Attack Squadron, Barksdale Field, La.

On October 16th and 17th, the 3rd Attack Group (8th, 13th and 90th Attack Squadrons) performed field maneuvers at Tyler, Texas.

The 3rd Wing, with 70 airplanes from the 20th Pursuit and 3rd Attack Groups, occupied Shushan Airport at New Orleans, La., October 20th to 24th.

Insular Possessions

Philippines:

The annual maneuvers of the 4th Composite Group, Nichols Field, under the command of Lieut. Colonel A.L. Sneed, were held at Del Monte, Bukidnon, Mindanao, January 14th to 26th. Thirty-four officers and 104 enlisted men participated. Supplies were transported on an Army mine planter, which carried also 2 officers and 70 enlisted men. The remaining personnel made the 500-mile trip to Del Monte by air. Landings were made by practically all pilots of the Group on 19 different landing fields which may be considered satisfactory for operations of units ranging in size from a flight to the entire Group.

Panama:

On March 6th, the 19th Composite Wing, comprising the 6th Composite Group at France Field and the 16th Pursuit Group at Albrook Field, joined other arms of the service in the Panama Canal Department annual maneuvers. There was practically a whole month of strenuous field activities. The maneuvers served to emphasize the necessity for adequate and prompt means for communicating between the commanders on the ground and the observers in the air. The maneuvers ended on March 30th with a review of approximately 8,000 troops at Albrook Field. The air element, comprising the entire aircraft strength of the Panama Canal Department, was commanded by Col. Wm.C. McChord.

Detachments of the 19th Composite Wing, commanded by Colonel Wm.C. McChord, demonstrated the versatility of the Air Corps when they participated on foot, in motors and in the air in a review at Fort Clayton, in honor of six general officers in the Canal Zone at that time.

Hawaii:

The 18th Pursuit Group, Wheeler Field, T.H., held an inspection, review and tactical exercise on April 4th, in honor of Major General Hugh A. Drum, the new Hawaiian Department Commander.

The 6th Pursuit Squadron, Wheeler Field, formed the Army part of the military airplanes escorting the Pan-American "Clipper" which arrived at Honolulu from Alameda Airport, Calif., after a record breaking flight on April 17th of 17 hours and 45 minutes.

Units of the 18th Composite Wing moved out of Wheeler and Luke Fields on June 25th and participated over a period of four days in the Hawaiian Department maneuvers under field service conditions. All equipment and material were camouflaged, rendering the positions of the Air Corps units hard to discern. Valuable practical experience was afforded all participating personnel. Flying missions were conducted at altitudes ranging between 14,000 and 25,000 feet.

Miscellaneous

In the Miami All-American Air Races, January 10th to 12th, demonstrations in tactical flying were staged by a squadron of 17 P-26's of the 1st Pursuit Group, Selfridge Field, Mich., and a flight of nine planes of the 3rd Attack Group, Barksdale Field, La. Amazing aerial feats were performed by the Army acrobatic team, the "Three Men on a Flying Trapese", led by Major Claire L. Chennault, with 1st Lieuts. J.H. Williamson and Wm.E. McDonald, Air Reserve, as wing men. Brooks Field was represented at the Races by a flight of 22 airplanes and personnel of 23 officers and 18 enlisted men.

A flight of 19 P-26A airplanes and one C-24 Transport, under the command of Lieut. Col. Ralph Royce, 1st Pursuit Group, Selfridge Field, proceeded to Brantford, Ontario, Canada, where on May 6th it participated in demonstrations held there in honor of the King of England.

From June 11th to the 25th, the 41st Division Aviation, Washington National Guard, participated with troops from Washington, Oregon, Idaho and Montana in the annual encampment at Camp Murray and Fort Lewis, Wash. Approximately 7,600 Guardsmen were at the concentration. Aerial gunnery and cooperative missions with other arms of the service constituted the program of the Washington National Guard airmen.

The 15th Observation Squadron returned June 14th to its home station, Scott Field, after operating for 3 weeks with the 61st Coast Artillery (Anti-Aircraft) in joint maneuvers at various localities in Illinois, Wisconsin and Michigan.

June 30th marked the completion of a year of "weather hops" to higher altitudes for the Department of Agriculture by pilots of the 41st Division Aviation, Washington National Guard, Spokane, Wash. During the year only 16 flights were cancelled. These flights, averaging 18,000 feet altitude, and lasting about 80 minutes each, were all started at about midnight. The year's flying time totalled approximately 440 hours. Douglas O-38E Observation planes were generally used, equipped with a device which holds the weather recording instrument on the left wing. Equipped with the SCR-134 set, communication was maintained with the Division ground station and the Department of Commerce station. The flights totalled 320, and ranged in altitude from 6,000 to 22,300 feet.

Led by Lieut. Colonel Royce, 21 officers and 18 enlisted men from Selfridge Field participated in the National Air Races at Cleveland, Ohio. The Army's "Three Men on a Flying Trapese" gave their usual clever exhibition of aerial acrobatics as a unit.

The 91st Observation Squadron, Crissy Field, Calif., with the 15th Photo Section attached, participated in field exercises for two weeks, with the base of operations at Watsonville, Calif., working in cooperation with the 6th Brigade encamped near Monterey, Calif.

A demonstration, comprising varied air maneuvers, was held at the Command and General Staff School, Fort Leavenworth, Kansas, on October 12th, with Air Corps personnel from Barksdale, March, Hamilton and Langley Fields, and from Fort Leavenworth, participating, utilizing 60 combat planes of various types.

Flights

During the field exercises of the 2nd Wing in the 4th Corps Area, the Airship TC-13, operated by the 19th Airship Squadron, Langley Field, Va., completed a non-stop flight of 900 miles from Langley Field, Va., to Miami, Fla., leaving the home station at 10:20 a.m., and arriving at Miami at 4:30 p.m. the next day. The return flight to Langley Field was made in 18 hours without stops.

The Cold Weather Test Flight operated during the entire month of February in the northern States where snow and ice last during the entire winter season. A composite organization, comprising 21 officers and 25 enlisted men, utilizing 17 airplanes of different service types, and led by Lieut. Colonel Ralph Royce, Air Corps, conducted various tactical problems. Temperatures as low as 28 degrees below zero were encountered, as well as a number of heavy snowstorms. The airplanes were equipped with a landing gear combination of wheel and ski adapted for landing on both bare and snow-covered ground. This excursion into the domain of King Winter afforded opportunities not only to test the new landing gear combination, but also devices for starting engines in zero weather, winter flying clothes, power plant installations, priming fluids, gasoline and oil. Valuable information was obtained in connection with the operation of various types of aircraft under severe winter conditions.

The 17th Attack Group, March Field, Calif., consisting of three squadrons equipped with P-26A Pursuit planes, and commanded by Capt. Ira C. Eaker, made a flight early in the year to Maxwell Field, Montgomery, Ala., and averaged a speed in excess of 220 miles per hour.

The first of what is expected to be a series of cross-country training flights into Central American countries from the Panama Canal Zone, was completed on May 2nd with the return of Headquarters Flight, 19th Composite Wing, to Albrook Field from San Jose, Costa Rica. The flight of five planes was led by Colonel Wm.C. McChord, Wing Commander.

A squadron of 2 Bombing and 7 Observation planes from France Field, Panama Canal Zone, under the command of Lieut. Colonel Lewis H. Brereton, visited San Salvador, Republic of Salvador. The visitors were favorably received by the officials of the Republic and others.

Captain Hez McClellan Air Corps, stationed at Bolling Field, D.C., accomplished during a period of two months an airplane reconnaissance of the routes to and from Alaska and throughout the Territory of Alaska. During this period he flew on 38 days a total of 153 hours and 25 minutes, during which time he secured a splendid photographic record of the places visited. The time on the ground was spent in ground reconnaissance, both visual and photographic and in necessary airplane maintenance.

Many of Captain McClellan's flights in Alaska were true pioneer flights. His was the first military airplane ever to land at Point Barrow, or to return from Point Barrow to Fairbanks, over the route taken. This route was from Point Barrow, southeast to Admiralty Bay, Dease Inlet, thence along Chipp and Ikpikpuk Rivers to Coleville River, thence via Killik and Chandler Rivers to the source of the latter, thence southeast to John River, which was followed to Bettles. From Bettles a direct line was followed to Fairbanks.

This route was mostly over terrain uninhabited and for which the details of the map carried were entirely inadequate to afford a reasonable expectation of safe progress over the ground in the event of airplane failure. This terrain is among the most rugged, desolate and difficult of traversing on foot of any in the World.

Captain McClellan, accompanied by Sergeant Tamosan and Corporal Krause, and piloting a C-29 Douglas Amphibian, took off from Bolling Field, June 12th and proceeded to Alaska via Dayton, Ohio; Fort Sill, Oklahoma; Midland and El Paso, Texas; Rockwell Field, Calif., and Seattle, Wash. He departed from the last-named city on June 22nd, flying to Skagway, Alaska, via Alert Bay and Swanson Bay, B.C., and Juneau, Alaska. He returned to his home station on August 14th.

In a long flight, directed by the Commander of the 1st Wing to test GHQ Air Force equipment, Colonel Tinker flew from Hamilton Field, with two stops at Salt Lake City, Omaha and Indianapolis. The return flight to Hamilton Field on July 9th was accomplished in 16 hours and 55 minutes, with stops at Indianapolis, Scott Field, Denver and Salt Lake City.

In a flight of over 400 miles and four hours of actual time, Captain Charles G. Williamson, Air Corps, flew from Hamilton Field to Clover Field, Santa Monica, Calif., with the cockpit hooded. Lieut. Edward W. Virgin, Air Reserve, accompanied him as emergency pilot. The pilot made no outside observation until directly over Clover Field, flying only by instruments and checks on them afforded by the radio beams.

Brigadier-General Frank M. Andrews received official credit for three new world's seaplane records as the outcome of his flight on August 24th from Langley Field, Va., to Floyd Bennett Field, Brooklyn, N.Y., to Bolling Field, D.C., and return to Langley Field. On this trip he covered the course in three hours, 45 minutes and 13 seconds, establishing a new speed record for 1,000 kilometers (621 miles) with a pay load of 2200 lbs. He automatically established records for speed over the same distance without load and with a load of 1100 pounds. These three new records were established in a Martin B-12W Bomber, with pontoon flotation gear in place of the normal landing wheels.

Flights on August 29th at Wright Field, Dayton, Ohio, by personnel of the Equipment Branch of the Materiel Division, resulted in the successful completion of automatic radio navigation. A Martin Bomber, equipped with a Sperry automatic pilot, and a standard radio compass developed by the Air Corps, was flown with additional apparatus combining these two devices. After the gyro pilot is engaged and the radio compass is tuned to a selected radio transmitter, the airplane proceeds to that destination irrespective of its heading just prior to that time. On reaching the radio transmitter at destination, the airplane circles, each time returning to the location of the radio station until the device is disengaged.

The 5th Composite Group, Luke Field, participated in an Aloha flight on September 30th, in honor of the visit to Hawaii of the Secretary of War.

On November 17th, Army pilots from Clark Field, P.I., intercepted the Japanese "Good Will" plane off the west coast of Luzon towards the end of its flight of 3,320 miles from Tokyo to Manila.

Flashing across the United States like migratory birds heading south for the winter, 29 Bombardment airplanes of the 7th Group, Hamilton Field, Calif., under the command of Lieut. Colonel Clarence L. Tinker, made what is believed to be a record for massed flight when they landed at Vero Beach, Fla., in the elapsed time of 21 hours and 50 minutes. This time included stops for servicing at Fort Bliss, El Paso, Texas; Barksdale Field, La., and Maxwell Field, Montgomery, Ala. These flights participated in the field exercises of the GHQ Air Force in December.

Flying Missions of Mercy

While the Provisional Cold Weather Test Group was at Sheboygan County Airport, Mich., a call for aid came from the State Department of Michigan, it being reported that a lone fisherman was marooned on Big Beaver Island, approximately 12 miles off shore in Lake Michigan. Lieut. Ott, in an O-43, departed from the airport, rescued the fisherman, and was back at the airport an hour and 25 minutes later.

The cold weather fliers, when at Duluth, Minn., on February 9th, were requested to dispatch to Ely, Minn., two tanks of oxygen, a CCC worker at that point being desperately ill from double pneumonia. The oxygen and a tent were loaded aboard a Bomber, and it arrived at Ely in time to save the life of the CCC worker. Captain C.E. Giffin, pilot, accompanied by Lt. Birrell Walsh, was forced to fly at less than 100 feet altitude on this mission.

Demonstrations on Army Day

Army Day, April 6th, saw flying demonstrations by Air Corps personnel in various sections of the country and in the Insular possessions.

At San Antonio, Texas, there was a night flying demonstration on April 5th, and on the following day, 48 planes from Randolph Field flew a "U.S.A." formation over the city. A 15-ship formation and a 3-ship formation were flown over the city at the same time.

Airplanes of the First Wing, GHQ Air Force, flew to various localities in California. There was also a night flying demonstration at Griffith Park, Los Angeles.

An aerial review was held at Barksdale Field, Shreveport, La., and the entire Third Attack Wing flew over the City of Shreveport immediately thereafter.

The 18th Pursuit Group, Wheeler Field, T.H., and the 5th Composite Group, Luke Field, participated in a wing review over Honolulu on April 5th as part of the Hawaiian Army Day program. Both groups joined with all other military forces of the Hawaiian Islands in placing extensive military exhibits on the capitol grounds at Honolulu for the benefit of the general public.

The 1st Pursuit Group, Selfridge Field, Mich., staged two tactical problems, performing demonstration flights over Detroit and Chicago. A flight of 18 P-26A planes was commanded by Captain George P. Tourtellot, and a similar flight over Chicago by Lieut. Col. Ralph Royce.

FLOODS AND FLOOD RELIEF FLYING

Operations of Flight "D", 16th Observation Squadron, were suspended during June, when Marshall Field, Fort Riley, Kansas, was entirely flooded as the result of heavy rains. Flights were made over the flooded areas all along the rivers emptying into the Kaw to determine the extent of the overflow and the damage caused thereby.

A Bombardment plane, piloted by Master Sergeant C.P. Smith, on duty with the Transport Service at the San Antonio Air Depot, ferried on June 15th food supplies to 60 youths of the Citizens Military Training Camp who were marooned by high water at Medina City, the flood being occasioned by an unprecedented deluge of rains in this part of Texas.

Food supplies from the Red Cross were ferried in Bombers from Kelly Field to various towns in the vicinity of Uvalde, seriously damaged by floods. Other planes were flown by Kelly Field pilots to warn persons residing in homes in the path of the oncoming flood waters.

Due to the inundation of Western Oklahoma, after a week of heavy rains, Flight "E" of the 16th Observation Squadron, Fort Sill, Okla., was called upon on May 19th to patrol the flooded areas and notify rescue groups by drop messages the location and condition of any marooned people sighted.

Exceptionally hard and incessant rains causing serious floods in central Luzon, isolating Clark Field and Fort Stotsenburg, and stopping all ground transportation to the south and north, pilots of the 3rd Pursuit Squadron, Clark Field, P.I., were able to perform a real service by aiding in the inspection of the flooded areas, transporting food and water to stranded parties and delivering mail.

AERIAL PHOTOGRAPHY

The 2nd Photo Section, Langley Field, Va., completed an aerial survey of the Fort Bragg Military Reservation for the Corps of Engineers. The survey was made with a 5-lens mapping camera at an altitude of 20,000 feet.

Captain Willis R. Taylor, of France Field, Panama Canal Zone, assisted by Technical Sergeant George W. Edwards, completed an aerial survey of the Guatemalan-Honduran-El Salvador boundary line. Approximately 2,250 square miles of territory was photographed.

The 11th Photo Section at Wheeler Field, T.H., made a photographic record of the high altitude bombing conducted by Air Corps squadrons at Waimanalo. During the complete test the total time flown was 5 hours and 55 minutes, in 4 flights. Fifty aerial exposures were made. No difficulty was experienced in catching the bursts of the bombs on the target.

During a training flight in night photography with the latest aerial night photographic equipment, members of the 23rd Photo Section, March Field, made photographs of the Exposition at San Diego, Calif., which were the equal of those taken during daylight hours, thus demonstrating the efficiency and advancement of military photography.

CHANGES OF STATION

The 3rd Attack Group moved from Fort Crockett, Galveston, Texas, to Barksdale Field, Shreveport, La., during the latter part of February, joining the 20th Pursuit Group, and effecting the consolidation of the 3rd Wing at that station under the command of Colonel Gerald C. Brant.

The jurisdiction of the War Department over Rockwell Field, Calif., terminated on October 25th, when the Navy took over this field. At the same time, the Army took over the jurisdiction of the Naval Air Station at Sunnyvale, Calif. As a result of this interchange of stations, 14 officers and 279 enlisted men of the 19th Bombardment Group were transferred to March Field, Calif. The 19th Airship Squadron, consisting of 2 officers and 118 enlisted men, was transferred from Langley Field to Sunnyvale. The Air Depot will remain at Rockwell Field until arrangements for its accommodation can be made at some other place.

The Navy also took over that part of Ford Island, Pearl Harbor, garrisoned by the Air Corps, and will occupy it as soon as facilities for the Army units can be obtained elsewhere.

The 88th Observation, Brooks Field, Texas, which is part of the 1st Wing, GHQ Air Force, was moved to its new station, Hamilton Field, Calif., towards the end of September. Six airplanes of the squadron made the flight to the West Coast, and the transfer of equipment and remaining personnel was effected by trucks and automobiles. Upon arriving at Hamilton Field, the Squadron was equipped with long range Amphibian planes, required in distance reconnaissance work, much of which will be performed over water.

DECORATIONS AND AWARDS

Decorations and awards made during the calendar year 1934 to Air Corps personnel for heroic conduct or distinguished service in connection with flying are enumerated below.

Distinguished Flying Cross:

In the presence of the entire garrison at Hamilton Field, Calif., on July 3rd, Colonel Roy C. Kirtland, Air Corps, Air Officer of the 9th Corps Area, presented the Distinguished Flying Cross to Captain Frederick L. Anderson, for heroism displayed while participating in aerial flight on December 14, 1934. While flying over the congested part of the city of San Francisco, his airplane caught fire. Directing his mechanic to jump, he remained at the controls, despite the fact that the cockpit was almost completely enveloped in flames, and piloted the plane away from the city, making a parachute jump when directly over San Francisco Bay. He was rescued by a crew from a Naval vessel.

At Mitchel Field, L.I., New York, the Commanding Officer, Col. Walter H. Frank, presented the Distinguished Flying Cross on December 21st to Flying Cadet Francis H. MacDuff, Air Corps, in recognition of his bravery in holding an airplane in a slow glide after the left engine and wing were enveloped in flames, thus enabling his two passengers to jump to safety with their parachutes. By the time Cadet MacDuff was able to jump, the plane was so low that he struck the ground in the first opening swing of the parachute, but he sustained no injury.

The Mackay Trophy:

On April 9th, at Bolling Field, D.C., Major James H. Doolittle, Air Reserve, Vice President of the National Aeronautic Association, presented the Mackay Trophy to Brigadier-General Henry H. Arnold, Air Corps, in recognition of his leadership of the Air Corps Alaskan Flight. This flight, participated in by 14 officers and 16 enlisted men in ten B-10 Martin Bombers, involved a total distance estimated at approximately 8,290 miles. Flying in easy stages, after taking off from Bolling Field, D.C., on July 19th, 1934, the Flight reached Fairbanks, Alaska, on July 24th. During the stay in Alaska, members of the Flight successfully executed an aerial survey of that territory and photographed from the air a total of 35,000 square miles of Alaskan territory in the space of three days. The return trip to Washington featured a mass non-stop flight from Juneau, Alaska, to Seattle, Wash., a distance of 950 miles, thereby for the first time linking the territory of Alaska with the United States by air, without a stop on foreign territory.

The Collier Trophy:

For his solo blind landing, his preparatory work in connection with instrument flying over a period of 15 years, and his subsequent contribution to the advancement of aviation in perfecting the instrument landing system of the Air Corps, Captain Albert F. Hegenberger, Air Corps, was awarded the Collier Trophy on July 22nd at the White House, by President Roosevelt.

Stating that he had followed Captain Hegenberger's career with interest, the President praised his contribution to American flying knowledge. The instrument landing system was adopted not only by the Air Corps, but also by the Bureau of Air Commerce, Department of Commerce, and it has been accepted as the most practical system developed to date for either military or commercial purposes.

The Cheney Award:

There was no presentation of the Cheney Award for 1934. So high a standard of heroic self-sacrifice was set by previous winners of this award, that the Board of Officers considering recommendations for awards and trophies in the Air Corps, although recognizing the worth of several instances of heroic conduct on the part of Air Corps fliers during the year, was of the opinion that this standard should not be lowered through the presentation of the Award for any but a most highly meritorious act.

The Soldier's Medal:

The Soldier's Medal was presented during the year to Privates Henry G. Thorne, 79th Pursuit Squadron; James G. Dilley, 94th Pursuit Squadron and Edward E. Burk, 5th Observation Squadron, for heroism displayed in rescuing persons from drowning.

The Hubbard Gold Medal:

The above decoration reserved for the greatest of explorers by the National Geographic Society was presented to the stratosphere fliers, Captains Albert W. Stevens and Orvil A. Anderson, Air Corps, on the night of December 11th, by General Pershing, in Washington, D.C., in recognition of their flight on November 11, 1935, when they reached 72,395 feet, nearly 14 miles, the highest altitude man has ever attained.

The Frank Luke Trophy:

This Trophy, annually awarded to the Army Pursuit flier on the West Coast credited with the best aerial Pursuit gunnery performance of the year, was presented on August 8th, during the American Legion Convention at Winslow, Arizona, to 2nd Lieut. Frederick C. Gray, Jr., Air Reserve, who made a score of 1176 out of a possible 1750 points. The 73rd Attack Squadron, March Field, under the command of Lieut. Colonel John H. Pirie, Air Corps, during the course of a navigation and formation training flight, visited the convention city for the presentation ceremony.

The John L. Mitchell Trophy:

Captain Karl G.E. Gimmler, of the 1st Pursuit Group, was the winner of the Mitchell Trophy Race held at Selfridge Field, Mich., on October 19th, piloting his Boeing P-26A plane at an average speed of 212.596 miles per hour over a 100-mile closed course. There were ten competitors in this race. An interesting air program, including other races, air aerobatics, parachute jumps, etc., was staged, in addition to the main event, before a crowd of approximately 40,000 persons. The Mitchell Trophy is a gift of former General William Mitchell, of the Air Corps, in memory of his brother, who was killed during the World War, and the annual competition therefor is limited to Air Corps pilots of the 1st Pursuit Group.

The Life-Saving Medal:

Captain Charles Y. Banfill, Air Corps, was awarded a Life-Saving Medal in recognition of his services when he was instrumental in the saving from drowning of four boys in Boston Harbor on June 23, 1932.

Panama Canal Department Commander's Trophy:

The 74th Pursuit Squadron, Albrook Field, Canal Zone, was declared the 1935 winner of the Department Commander's Trophy annually awarded the best Air Corps Squadron in the Canal Zone. In competition with other squadrons, the 74th Squadron, commanded by 1st Lt. Orrin Grover, amassed the highest total of points in a number of requirements which included inspection and close order drill, establishment of a bivouac camp, including the cooking of one meal, technical condition of airplanes and hangars, administration and athletics.

Aircraft Efficiency Trophy:

The 50th Observation Squadron, Luke Field, T.H., was the winner for the Fiscal Year ending June 30, 1935, of the Aircraft Efficiency Trophy, awarded annually by the H.F. Wichman Co., Ltd., of Honolulu, to the squadron attaining the highest efficiency in the operation and maintenance of aircraft.

Honorary Awards:

During the commencement exercises of the graduating class of the South Dakota State School of Mines, Rapid City, the Hon. George H. Dern, Secretary of War, and Captain Albert W. Stevens, Air Corps, were, among several other men prominent in the field of science, awarded honorary degrees; Mr. Dern for his high achievements in the profession of mining engineering, and Captain Stevens in recognition of his ability as a leader and as a scientific observer in the greatest of stratosphere flights.

At a meeting on September 19th in New York City of the Council of the Institute of the Aeronautical Sciences, Major General Benjamin D. Foulois was elected an honorary member of the Institute for his courageous foresight in laying the foundation of military aviation; for the personal sacrifices he made in pioneering a field which has become a major factor in the national defense of all countries; for his advocacy of the primary position aircraft should occupy in commerce and military strategy, and for his leadership in utilizing the aeronautical sciences for the technical development of the flying equipment of the Army.

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FLIGHTS BY THE FOURTH COMPOSITE GROUP IN PHILIPPINES

Four altitude flights were recently made from Nichols Field for the purpose of obtaining Cosmic Ray data for use by Dr. Milliken in his studies. Dr. H.V. Neher, from the Calif. Institute of Technology, was the scientist under whose supervision the flights were made.

A P-12E airplane was used, all unnecessary equipment being removed. At first considerable trouble was experienced, due to moisture forming inside the electroscope, but after a drying agent was placed in the instrument good results were secured. Captain John W. Kirby and Lieut. P.K. Morrill were the pilots.

Dr. Neher, his work completed for the present, departed for the United States on November 26th. He plans to return in the near future, however, to secure additional information by means of free balloons with which he hopes to reach an altitude of 70,000 feet.

Observations in this locality are of particular importance, due to the magnetic-equator crossing Nichols Field.

During the first four months of the Fiscal Year, the 4th Composite Group has flown approximately 4400 hours. In addition to the usual training missions, several interesting flights were made in connection with inspections by General Frank Parker, Dept. Commander.

The first of these flights left Nichols Field on August 12th, returning August 14th, for the purpose of inspecting the new landing field at Basco, Bataan Islands. Four O-19C planes and the OA-3 Amphibian were used. The pilots were Lieut.-Colonel A.L. Sneed, Major Martinus Stenseth, Captains H.R. Wells and L.D. Fator. The passengers were General Parker, Colonel H.R. Andreas, M.I. Reserve, and four enlisted men.

On September 3rd, a second flight was made to Puerta Princesa, Palawan; Cebu, Cebu; Del Monte and Zamboanga, Mindanao; Jolo, Jolo; Tawi, Tawi; Sulu Archipelago; Cotabato, Davao, Mindanao; Tacloban, Leyte and Legaspi, Luzon, to inspect landing fields and military reservations. Two O-19C's and one OA-3 comprised the flight, the pilots being Captains Wells, August W. Kissner, N.L. Cote and Lieut J.F. Haskell, and the passengers, General Parker, Colonel Andreas and four enlisted men. The flight returned to Nichols Field on September 18, 1935.

On Sept. 6th, a flight of two O-19C's departed for Mindanao to join the Commanding General on his inspection of the Southern Islands. The pilots were Lieut. H.Q. Huglin and Master Sergeant S.C. Smink, and the passengers, Vice-Governor General Hayden and Mr. J.W. Jones from the Governor General's office. The flight returned to Nichols Field on September 11th.

Recently the entire Group participated in a series of welcome flights for personnel arriving from the United States for the inauguration of the Philippine Commonwealth. The first of these was for General Douglas MacArthur, who arrived on the S.S. PRESIDENT HOOVER on October 25th, to take over his new duties with the Philippine Government. The planes passed in review twice as the vessel steamed into the harbor. On November 2nd, a similar flight was made to welcome Secretary of War, Hon. George H. Dern, who arrived on the U.S.S. CHESTER.

On November 8th, the third of these reviews was flown as the Congressional Party, headed by Vice President Garner, arrived on the S.S. PRESIDENT GRANT.

On November 9th, a flight of four O-19C airplanes departed for Baguio to ferry the Secretary of War, Brigadier-General Creed F. Cox, U.S.A., and Major Harry A. Bishop, M.C., from Baguio to Nichols Field. The pilots were Lieut.-Colonel Sneed, Captains G.W. Mundy, W.R. Shephard and Lieut. C.A. Clark, Jr. The return trip was made the same day.

Hon. L.L. Crawford and Hon. William Cartwright, Members of Congress, were passengers on a flight to the Southern Islands on November 12th. Two B-3A's were used, piloted by Capt. J.S. Mills and Lieut. W. Steele.

Lieut. C.A. Clark, Jr., commanding the 6th Photo Section, Nichols Field, with Master Sgt. Vernon H. Merson operating the camera, took aerial photographs of the inaugural ceremonies of the Commonwealth Government of the Philippines on November 15th. Photographs were also taken of the arrival and departure ceremonies of Vice President Garner, the Secretary of War and the Congresional Party. Other photographs were made of the Guard of Honor being presented to Mr. Garner and to the new United States High

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THE GHQ AIR FORCE CONCENTRATION IN FLORIDA

The GHQ Air Force Maneuvers in Florida, involving ten days of intense, hard-flying tactical missions of attack and defense, during the course of which more than a million air miles were covered under simulated war conditions without a major mishap, indicated in no uncertain manner the high mobility of the organization, the excellent standard of flying efficiency of the participating personnel, the great reliability of the flying equipment and the exceptional aircraft maintenance system.

Among other high lights incident to these maneuvers were the accomplishment of this first concentration of airplanes attempted by the GHQ Air Force since the new set-up was created within the elapsed time of 22 hours and 50 minutes without a casualty to either men or planes, and the flight of the 7th Provisional Bombardment Group of 27 Martin Bombers from Hamilton and March Fields, led by Lieut. Colonel C.L. Tinker, in an elapsed time of 21 hours and fifteen minutes, with three stops en route. The airplanes in the Florida concentration crossed mountains and plains in various kinds of weather conditions and landed to score a "bull's-eye" for accuracy and timing.

Expressing gratification over the elapsed time required for the arrival of the air armada at the concentration points, General Frank M. Andrews, GHQ Air Force Commander, stated that he was satisfied with the quality of the planes but not with the quantity. The arrival of planes in Florida on scheduled time from points all over the country demonstrated that the GHQ Air Force can be concentrated in any part of this country within 24 hours.

General Andrews arrived at Miami on December 1st in a Douglas Transport and was accompanied by members of his staff, as follows: Colonel W.E. Cooper, Surgeon; Major W.W. Dick, Adjutant General; Major Barney M. Giles, Deputy Chief of Staff; and Major Ralph H. Wooten, Asst. to the Asst. Chief of Staff, G-4. They left Langley Field, Va., at 8:30 a.m., inspected the base at Vero Beach, Fla., and arrived at Chapman Field at 4:00 p.m. The tent Headquarters of the Commanding General at Chapman Field and that of the Second Wing at the Miami Municipal Airport were complete cities within themselves. They were established by the ground force prior to the arrival of the flying units and, in addition to camp streets, included in their layout field kitchens and mess halls, complete telephonic communication systems and mail services.

Other members of General Andrews' staff arriving in advance of the Air Force were Major Robert Olds, Air Force Inspector, in a Bomber, accompanied by Col. R.L. Maxwell, Ordnance Officer, and Col. C.C. Drake, Air Force Quartermaster. In another Bomber, piloted by Major Charles H. Howard, Communications Officer, was Lieut. Higgins, of the GHQ Air Force Headquarters Squadron. Arriving in Attack planes were Lieut. Colonels Follett Bradley and Joseph T. McNarney.

As concentrated in Southern Florida, the GHQ Air Force retained its three-wing organization, though their composition was changed and the units were skeletonized and operated at a strength considerably below their normal composition. One unit of the Third Wing, the 20th Pursuit Group, was shifted to the Second Wing.

The 1st Wing, under the command of Brigadier General Henry H. Arnold, was based at Vero Beach.

The 2nd Wing, under the command of Brigadier General Henry C. Pratt, comprising 30 Pursuit planes from Barksdale Field, La., and 27 planes from the First Pursuit Group, Selfridge Field, Mich., was based at the Miami Municipal Airport. The leader of the Pursuit forces in the air was Lieut. Colonel Millard F. Harmon, the present commander of the 20th Pursuit Group at Barksdale Field.

The 3rd Wing, under the command of Colonel Gerald C. Brant, and comprising the 19th and 90th Attack Squadrons from Barksdale Field, was based at Fort Pierce, Fla.

The headquarters of these three wings were connected by a loop teletype, and orders were transmitted to them simultaneously.

On Tuesday, December 3rd, the first day of the maneuvers, Miami was saved from a tactical aerial bombardment through the presence of a swift and powerful Pursuit force which "destroyed" the attacking fleet in a "dog fight" over the city of Hollywood, Fla. This problem in the maneuvers of the GHQ Air Force demonstrated the value of air defense, observers pointed out. The shipping and harbor facilities of Tampa, an unprotected city, were "devastated" as was early construction work on an air base on Virginia Key to the east of Miami. At 11:00 a.m., 18 Bombardment planes from the First Wing, and under the command of Lieut. Colonel Tinker, theoretically dropped 36,000 pounds of bombs on Tampa's port. Then the Bombers headed for their base preparatory to launching an attack upon Miami. Observers of the defensive force spotted this proposed attack at 12:30 p.m. over Hollywood, and General Pratt sent up 36 Pursuit planes, under the command of Lieut. Colonel Harmon, for the combat, which lasted ten minutes before the "enemy" force was "annihilated".

In the meantime, however, 18 Attack planes of the Third Wing, under the command of Major William N. Amis, swept down the coast and dropped about 350 "bombs" on Virginia key, completely interrupting the construction there of an auxiliary airdrome. The speedy Attack planes escaped to their base without being intercepted. The speed at which the Pursuit planes met the threatened attack was shown in the fact that every plane of the squadron was off the ground and in the air within four minutes after the alarm was sounded. In meeting the attack of the Bombardment planes, the Pursuit ships were required to be off the ground and at an altitude of 11,000 feet in nine minutes.

On Wednesday, December 4th, the defense of Miami and contiguous territory was further advanced when the defending force of the GHQ Air Force fought two pitched "battles" in carrying out tactical maneuvers. The first engagement occurred at a high altitude when Pursuit pilots of the Second Wing dove into the midst of a wing of Attack planes northeast of the city to stave off an attack to demolish an imaginary airdrome on Sand Key.

Without further preparing for combat, the Pursuit planes turned and swooped northward to intercept Bombardment planes returning from the scene of the "destruction" of a theoretical supply base at Fitzgerald,Ga. The Bombers were scheduled to return to their base via Fort Myers and Fort Lauderdale, and the Pursuit Wing sought to trap them between the two cities. These two objectives afforded the problems of the GHQ Air Force on the second day's maneuvers. It was up to the Pursuit to defend all territory within a radius of 80 miles of Miami. It was a stimulating sight when the Pursuit planes took off from the Miami flying field when the alarm was given of the approach of "enemy" aircraft. They roared across the flying field into the wind with throttles wide open and quickly gained altitude and formation for the mass attack upon the fast-approaching planes.

General Andrews observed the maneuvers with his staff from his own plane. The first "combat" was completed in 16 minutes after contact with the raiding planes was made. There were 28 Attack planes in the "enemy" formation, with the defenders being off the ground six minutes after the alarm sounded.

The Bombardment airplanes flew 1,000 miles in the attack on the Georgia objective and returned via Fort Myers and Fort Lauderdale. In this engagement the planes maneuvered at an altitude of 11,500 feet, meeting about 10 miles west of Fort Lauderdale.

General Pratt explained that the principal problem was to make contact with the approaching formation, with the organization in shape to get off and meet the Attack planes far enough away from the defended area to prevent the possibility of damage to that particular area. "There are no guns and no marksmanship", he said. "These problems are a test of our communications system. Future problems, perhaps, will be harder to meet, and we will try methods other than the successful means of the past two days."

At a luncheon, where General Andrews and his staff were honored guests of the Greater Miami Airport Association, he stated that America is practically a self-sustaining country and that it is hard for some people to understand that some nation might try by force to take part of our possessions. "Any nation, in order to attack us," he said, "must bring forces by water to our shores and must meet and overcome our naval forces. No nation can hope to wage successful warfare against the United States unless it establishes supremacy in the air. Any enemy, to operate against us, must have land or water bases, and America must have such an air force as to deny him these bases."

Pointing out that he had under his command in the maneuvers about 156 planes, General Andrews stated that even though in this session Congress were to appropriate funds for increasing the number of planes, it would take at least two years to construct and equip them. He stated that the time for procurement is not the fault of the system or the agencies of procurement; that it takes a long time to build airplanes.

Touching on the Wilcox measure to provide air bases in strategic sections of the country, he stated that the base authorized in the southeastern part of the country is a very important one to serve as protection for southern industrial areas and as a base to flank any force attacking the Panama Canal.

In a previous talk on the subject of air bases, General Andrews stated that an air base is not a single field, but an area perhaps more than 100 miles square, with a main airdrome and many auxiliary fields. The requirements of an air base include facilities for operations, supply, maintenance, repair, housing of personnel and equipment, care of sick, and communications. It should have, not too far distant, facilities for bombing and gunnery practice. The bombing and gunnery range should, where practicable, be contiguous to water, so that planes taking off with bombs will not have to fly over inhabited areas; and also to facilitate the operation of amphibians and other types of water aircraft. The permanent Air Corps station should be near a city for convenience in supply and housing and also to afford recreational and educational facilities for the garrison.

Other speakers at the luncheon were General Pratt and Colonel Hugh J. Knerr, Chief of Staff of the GHQ Air Force. The former explained Pursuit problems, while the latter emphasized the vital importance of communications, without

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which an Air Force cannot be operated. He stated that adequate sleep and proper food is vital to Air Force personnel. "The force here", he stated, "is not adequate to defend even a small part of the United States. What you see here is only a small part of that required for the entire country."

Tactical maneuvers were continued on Thursday, December 5th, with one wing extending its activities as far north as Valdosta, Ga. The day's problems included two main objectives, involving the Bombers at Vero Beach, the low-flying Attack planes at Fort Pierce and the Pursuit protecting the Miami area. The Attackers were instructed to plunge southward at the Municipal Airport to "destroy" its "nest" of Pursuit ships which for the previous three days had interfered with the attacking wing's missions.

Simultaneously, the Bombers were ordered to proceed northward via Jacksonville to Valdosta, Ga., to "demolish" an imaginary supply depot similar to the one "wrecked" the previous day at Fitzgerald, Ga. Valdosta was understood to be an "unprotected" city, similar in importance to Tampa, where "great damage" was caused by prior "bombardments". With the mission accomplished, the Bombers roared southward over Inverness to Tampa to "wipe out" oil storage tanks, then continued to Everglades and cut back east to Hollywood, returning to their base.

It was the duty of the Pursuit Group not only to ward off the Attack planes but also to intercept the Bombers "somewhere in the Miami area", which extends in a radius of 100 miles from the city, before their return to their base. Miami was "bombed" slightly in the latter engagement, when nine of the Bombardment planes escaped the attack of the defending Pursuit and reached one section of the city before being driven off, although the observation stations of the defense group had been established at a further distance from the city than heretofore in the maneuvers. This was due to the simultaneous threats from both the Attack and Bombardment planes.

The difficulties of the defense plans are shown by the fact that the Pursuit, having been informed of the threatened attacks from observation posts, drew in their flying lines to a circle around Miami having a radius of only 15 miles. In this problem the Pursuit planes were able to ward off the second threat of the day of the Attackers, and after disposing of the danger from that quarter concentrated their efforts towards driving off the Bombers. They, however, split into two squadrons, nine ships flying over part of Miami and "dropping" their explosives.

It was evident to observers that there were not enough Pursuit planes in action properly to protect the city from the combined efforts of the two "enemy" groups. The first Attack plane threat was intercepted 31 minutes after leaving Fort Pierce. In the second effort of this group, they divided, one squadron flying to sea on a southeast course and the other traveling southwest. This maneuver failed to split General Pratt's defense force, although the plan of the Attack planes, directed by Colonel Brant, was a strategic move.

After the day's maneuvers, staff officers were unanimous in the opinion that the problem illustrated that the Pursuit Group must have at least four times the number of planes in the attacking squadrons in order to defend a given point, as the element of surprise is with the attacking force. The problems, too, demonstrated the vital importance of the complete functioning of communications.

On the night of Friday, December 6th, Miami was given a demonstration of warfare at night, when nine Bombers swooped down the Florida coast and attempted to "devastate" its port facilities. The Bombers arrived over the city at 8:45 p.m., speeding over Biscayne Bay at an altitude of about 4,000 feet. Ground troops were unable to discern them. Their presence was noted when they dropped six giant Ordnance flares, each of 5,000,000 candle power, over the Bay to simulate actual bomb dropping.

The Bombardment Commander, General Arnold, directed that no additional flares be dropped because of prevailing strong easterly winds which swept the first long-burning flares close to Miami's waterfront. The attackers escaped without an "engagement" with protecting forces.

Earlier in the day, the Bombers slipped through an observation net encircling Miami at a radius of 100 miles to demolish an imaginary aircraft carrier at Key West. Simultaneously, Attack planes struck at an "airdrome" on Key Largo, south of Miami, but met the Pursuit ships of the 2d Wing over Hollywood. A sharp "battle" theoretically occurred, in which it was presumed the Attack squadron was "wiped out". Reviving quickly, however, in the best "problem warfare manner", the Attack squadron took the air again and "destroyed" an undefended "airdrome" at Orlando, Fla.

The maneuver again demonstrated the vital importance of communications, and throughout the tactical action during the day commanders maintained complete transmitting and receiving service with squadron leaders.

The intelligence staff of the Bombardment Wing heard "rumors" of a second aircraft carrier approaching the Florida east coast after the imaginary carrier had been "destroyed" at Key West. Scouting planes located the imaginary second carrier 60 miles off Vero Beach, and it was the next objective of the Wing. In this maneuver the Bombers went out for the carrier at 10:25 a.m., and returned unharmed to their base at Vero Beach at 11:15 a.m. Not so fortunate were the Attack ships basing at Fort Pierce. As they headed for the "airdrome" at Key Largo, they encountered the Miami Pursuit ships and were technically "annihilated" in the combat over Hollywood.

Still another attack was made on the Miami Municipal Airport. This was partially successful, as "some damage was observed". Several planes of the Pursuit Group, however, were able to avoid the surprise attack, getting into the air and engaging the "enemy", although greatly outnumbered.

No actual casualties to either men or equipment were reported thus far, and wing commanders expressed their satisfaction with the trouble-free success of the war games.

Following almost a week of intensive work, the various units of the GHQ Air Force were grounded on Saturday, December 7th, for a thorough mechanical check-up of equipment. The officers and enlisted men of the 7th Bombardment Group, based at Vero Beach, were hosts to citizens of the city when "open house" was observed at the camp. The visitors were shown the technical details of the airplanes and their operation and taken on a sight-seeing tour of the camp, just east of the airport and a small"city" in itself.

The 59th Service Squadron from Langley Field, Va., with a train of 75 trucks, under Major H.H. Holland, was divided into two detachments, one at Vero Beach and the other at Fort Pierce. They erected the camps at these two concentration points.

On Sunday, December 8th, 36 Pursuit planes took off and landed four times during four hours of defensive work in the Miami area to save it from "assaults" of Bombers and Attack planes from Vero Beach and Fort Pierce bases. On two occasions the Pursuit intercepted 18 Bombers, under the command of General Arnold. After the first interception over Fort Lauderdale, the Pursuiters noticed that the Bombers reduced their speed as they flew away on a northwesterly course. By proper timing, the Pursuiters were able to intercept the Bombers again about 50 miles north of their objective.

Eighteen Attack planes, under the command of Colonel Brant, followed the Bombers southward, but were intercepted by Pursuit craft. A theoretical victory was claimed by the Pursuiters when their activities ended with their final landing at the Miami Airport. At Vero Beach and at Fort Pierce, however, the attackers also claimed that they had accomplished their objectives.

It may be stated here that the Pursuit planes flew without radio direction from the ground and solely on a compass course in order to prevent the "hostile" air force from learning, through the medium of radio messages, where the "defenders" were lurking high in the air.

Massed groups of Bombers and Attack planes launched on Monday, December 9th, a series of assaults upon Miami in an endeavor to "wipe out" the entire metropolitan city. The Attack planes "poured" imaginary machine-gun bullets upon the defenders as they dropped equally imaginary bombs throughout the area in their flight, while the Bombers "devastated" a large section of the city. This assault theoretically "demolished" Miami. As in the previous week, the Bombers made a successful night raid, flying high over the city's harbor and port facilities and dropping giant flares to simulate heavy bombs.

Prior to the "attack"on Miami, the Bombers massed over defenseless Port Tampa and "destroyed" shipping and harbor facilities. Sixteen planes, theoretically laden with destructive missiles, pounded the unsuspecting port. Recrossing Florida after "reducing" the west coast port to "smoking ruins", the Bombers then joined with the Attack planes in their pitched "battle" in the Miami area.

It was demonstrated again that no "enemy" plane can enter the Miami area, extending in all directions for 100 miles, without the risk of a determined effort by the Pursuit Wing Commander to destroy it. Six of the Bombardment planes escaped the trap of the defending Pursuit to carry out their mission of bombing Miami. The Attack planes came in twice and were "destroyed" each time. During the second threat by the Attack planes, they were engaged in combat some 18 miles north of the Municipal Airport,and while this "battle" was being waged, observation radios flashed the signal that four groups of Bombardment planes were sighted. Upon receipt of this information, General Pratt ordered the defending forces to split into two sections. Combat leaders whirled and cut across the 20-mile arc of defense to engage the latest threat after "finishing"off" the Attack planes.

The Air Force problem for the defensive group was to see if the Pursuit planes could go farther away from their base than was the case the past week and still be able to defend the city. Complications ensued when the Bombers divided into groups and swept within the defensive area while the Attack planes were on the outskirts.

In the assault on Port Tampa, the attacking force of 18 Martin planes, under the command of Lieut.Col. Tinker, flew a total of 650 miles in 3½ hours, the planes leaving Vero Beach at 12:10 p.m., and returning at 3:40 p.m. The outward flight was made via Orlando, and the return flight via Miami.

Two flights of the 90th Attack Squadron left Fort Pierce at 11:00 o'clock to make a theoretical attack on an "airdrome" three miles north of Hialeah. They were intercepted ten miles west of Lake Worth by the "enemy's" 36 Pursuit planes from Miami and were repulsed. The Attackers were under the command of Major Amis.

The "war" ended on Tuesday afternoon, December 10th, and peace was declared. Miami, which had suffered "devastating bomb raids" during a period of a week and a half, settled down to enjoy the All-American Air Races. All the three wings of the GHQ Air Force concentrated their full strength in a common objective and streaked out to sea in search of the "enemy".

After the "War" had ended, General Arnold and Colonel Brant immediately wired their congratulations and hearty good wishes to General Pratt, the defending commander at Miami. General Pratt returned equally cordial messages.

Wednesday, December 11th, was spent in maintenance of the airplanes and equipment. General Andrews made a tour of inspection of the four bases used during the maneuvers - Miami Municipal Airport, Chapman Field, Vero Beach and Fort Pierce. The 160 planes of the GHQ Air Force, those including the planes of the combatant units as well as the planes of the various staff officers and transport planes, began concentrating on Miami for the All-American Races.

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NEW GENERAL OFFICERS OF THE AIR CORPS

Announcement was recently made by the War Department of the appointment of Colonels Gerald C. Brant and Henry B. Clagett, Air Corps, to the rank of Brigadier-General (temporary).

General Brant remains at his present station, Barksdale Field, La., in command of the 3rd Wing, GHQ Air Force. General Clagett will take station at March Field, Calif., and assume command of the 1st Wing, GHQ Air Force, replacing Brigadier-General Henry H. Arnold, recently ordered to Washington, D.C., as Assistant Chief of the Air Corps.

General Brant has been in command of the 3rd Wing since the organization of the GHQ Air Force in March, 1935. His biography was published in the issue of the News Letter of July 1, 1935.

General Clagett, at the time of his new appointment, was attending the Army Industrial College, Washington, D.C. He was born at Fort Wayne, Mich., December 19, 1884; attended public schools in Texas and Wyoming; the Trinity School in New York City; and high School in Cincinnati, O. He then received an appointment to the U.S. Military Academy and, upon his graduation on June 12, 1906, was appointed a second lieutenant and assigned to the 23rd Infantry, with which he served in the Philippines, in Indiana and Texas, until December, 1912. He was promoted to 1st Lieutenant on May 9, 1911, and assigned to the 23rd Infantry. On December 6, 1912, he was appointed Aide to President William H. Taft, and remained on that duty until the latter went out of office. He was reappointed Aide to President Woodrow Wilson on March 4, 1913, and continued in that position until May, 1914, when he rejoined the 23rd Infantry at Texas City, Texas.

Transferred to duty in the Panama Canal Zone, he was stationed in the Isthmus until September 1, 1917, serving with the 10th Infantry from Feb. 1915, until July 1, 1916, when he was promoted to Captain; with the 33rd Infantry until June 1, 1917 and, finally, with the 5th Infantry.

Upon his appointment as a Major in the Aviation Section, Signal Corps, Sept. 1, 1917, General Clagett was assigned to duty at Kelly Field, Texas, and commanded successively the 1st, 3rd and Provisional Recruit Regiments, also the Recruit Division, from October 13, 1917, to May 8, 1918. He was stationed at Rockwell Field, Calif., from May 18 to August 22, 1918, completing final primary training, also gunnery training.

Returning to Kelly Field on September 2nd, he remained there until January 28, 1919, being in command of the Flying Department, and later commanding officer of the field.

Until September 21, 1919, he was on duty as Supervisor of the Southwestern District at Dallas, Texas, during the course of which he was in command for several months of the Dallas to Boston Flight, the purpose thereof being to stimulate recruiting for the Air Corps.

Returning again to Kelly Field, he commanded for brief periods the 1st Surveillance Group, the 1st Wing and the 1st Day Bombardment Group until his assignment, on December 22, 1919, as Air Officer of the Fourth Corps Area.

Assigned as student at the Air Corps Tactical School at Langley Field, Va., in October, and remaining at that field after his graduation until January, 1924, he assumed command of Bolling Field, D.C., and continued in this capacity until Aug. 24, 1926, when he was assigned as Air Officer of the 9th Corps Area. Four years later he returned to San Antonio and commanded the Primary Flying School, Brooks Field, July, 1930-October, 1931, and the Advanced Flying School, Kelly Field until March 1, 1935. At various periods he also commanded the Air Corps Training Center.

From March to August, 1935, Gen. Clagett was Chief, Buildings and Grounds Div., Office Chief of the Air Corps. He was then assigned to the Army Industrial College.

SITTING ON TOP OF A VOLCANO

By the Wheeler Field Correspondent

The piloting personnel of the 18th Pursuit Group were afforded an opportunity lately such as seldom falls to the lot of an Air Corps officer. On the evening of November 21st, practically all the pilots of the Group were at the Kilauea Military Camp on the Island of Hawaii, when the eruption of Mauna Loa volcano occurred.

The Group had departed from Wheeler Field on Oahu at 8:30 a.m., on November 19th on a routine training flight to the eastern islands of the Hawaiian group, for the purpose of reconnoitering and landing upon all the emergency fields on the Islands of Molokai, Maui, Lanai and Hawaii.

The first landing was made on Kalaupapa Field, on Molokai. This field is on a small flat peninsula jutting out from the foot of the vertical thousand-foot cliffs forming the escarpment of the north shore of the island. The old caved-in crater of the extinct volcano which built the peninsula occupies most of it but leaves room for a fair two-way field and for a small world-known leper colony. Many people from the leper colony came down to see the planes land, and the physical misfortune of these people impressed the Group personnel more than our airplanes could have interested them.

Continuing to the eastward, the entire Group landed on four more emergency fields which for variety would be hard to surpass anywhere. Along the north shore of Hawaii, thick weather, low ceiling and rain sandwiched the Group between vertical cliffs, low solid clouds and a rough choppy sea. Prudence was the better part of valor, and the airmen flew back to Upolu Point on Hawaii and spent the night there.

The following day the weather was still dangerous along the north shore of Hawaii, so the entire Group flew around the island to the south and, despite low ceiling and rain near Hilo, worked into the airport at Hilo safely and without serious difficulty.

All the personnel were taken to the Military Rest Camp, on the brink of Kilauea volcano, for the night and comfortably housed in the cabins there, prepared for a quiet, restful one-day layover before the return flight.

Nature, however, decreed otherwise. About 1:41 a.m., on November 21st, the entire camp was awakened by a severe earthquake, which lasted about one minute and was violent enough to rattle the walls of the cabins against the beds, shake pictures on the walls and rattle light objects in cupboards. There really is not much that one can do about an earthquake at 1:41 a.m., so everyone went back to bed and forgot it until morning. Dr. Jagger, the Government Volcanologist, determined from his readings that the quake originated deep in the earth and about four miles from the crater of Mauna Loa on the northeast slope. This finding was announced about noon.

Two excellent talks on volcanos were given the Group, one of them illustrated by very good motion pictures of the Kraka Toa eruption. With this background it was now time for a practical demonstration which was forthcoming about 6:30 p.m. First, word was received from the observation party on Mauna Loa that one of the great rifts or cracks was commencing to show molten lava which was steadily rising in the crack. Within a brief period the molten lava was doing something, but the low clouds and the smoke concealed exactly what it was. However, the glare through the thin layer clouds was reflected on the higher layer with an intensity that was visible on Oahu - two hundred miles away.

Plans were hastily made for an early take-off on November 22nd, and the entire Group flew to the scene of activity on Mauna Loa. The weather was perfect, and all had a splendid view of a major volcano in action. The crevice from which the lava was vomiting forth was about 12,000 feet above sea level and about 1,500 feet below the rim of the crater. The bulk of the activity was concentrated along the crack for a distance of about one-eighth of a mile. Molten lava and rocks were being played into the air in three main fountains, each to a height of about 300 feet. At times the height of the fountains would increase to 800 feet. Between the major fountains, lesser fountains threw incalculable gallons of boiling rock into the air to the height of a mere hundred feet or so. The top of the fountains was crowned by a huge vapor cloud which plumed into a beautiful 3,000-foot anvil-shaped mass as it drifted away slowly in the wind. The sulphur fumes and steam clouds prevented flying close to the eruption on the east. The heat was terrific, and convection currents threw the airplanes around violently.

From the base of the fountains a river of wine red lava, a quarter of a mile wide, flowed away at an estimated speed of 30 miles an hour, with chunks of ash and rock the size of a room floating along its surface. Half a mile from the fountains the stream divided, and a fourth of it poured back into a great crack in the earth. The flow into this crack looked

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HOW NEW ENGINES ARE DEVELOPED

by F.L. Prescott, Power Plant Branch, Wright Field.

The story of the development of a new engine is an interesting one, especially to those who are not too close to the job and too much engrossed with the details to get a bird's-eye view of the project as a whole. Several such developments are under way at the present time, looking to the supplying of the Air Corps with engines of adequate power, endurance, and economy to meet all competition.

In order to insure that the multi-cylinder engine will be able to pass its tests with a minimum of damage and loss of time, the cylinder and valve gear are incorporated in a single-cylinder test engine upon which severe tests are imposed in order to demonstrate that the component parts, such as valves, valve springs, rockers, cylinders, pistons, and connecting rods, have been adequately proportioned and are safe for use in the multi-cylinder engine construction.

In conducting these single-cylinder tests a number of discoveries of unusual interest have been made. Among these is the fact that standard engine parts have been operated under single-cylinder conditions at loads and stresses far in excess of those for which the parts were designed. This applies particularly to pistons, valves, and connecting rods. It is, of course, realized that multi-cylinder crank cases and crankshafts are still subject to development in the multi-cylinder stages of engine development. In the course of the tests, thus far conducted, it has been further found, for example, that liquid-cooled cylinders of conventional design can stand operation at brake mean effective pressures of 400 lb./sq.in. and better, provided detonation and pre-ignition do not occur.

It is believed that the Materiel Division holds the world's record for output in brake mean effective pressure from a single-cylinder engine. This was accomplished on a single cylinder of special design having a bore and stroke of 4-5/8 by 7 and operating at 1900 r.p.m. The fuel used was the best available, but reached its limit at slightly over 400 lb./sq.in. brake mean effective pressure, from which point upward detonation was suppressed by means of water supplied with the fuel. A maximum brake mean effective pressure of 579 lb./sq.in. was recorded and it was also found possible to take an indicator diagram under these extreme conditions, using the pressure indicator developed by the Materiel Division. It was found that the compression pressure shown by this indicator card was approximately 350 lb./sq.in. and the maximum pressure approximately 1550 lb./sq.in. The piston used in this test was a rather rugged design of conventional piston with a heavy crown and heavy side walls to carry away the heat and dissipate it through the skirt to the cylinder walls.

Cylinders of more conventional design have shown outputs of 300 to 400 lb. brake mean effective pressure without the use of water as an anti-detonant.

Two fuels have been found which were sufficiently high in anti-knock value to permit operation above 400 lb./sq.in. without detonation and pre-ignition when used with extremely cold spark plugs. The output of this cylinder under these conditions was about 1-1/3 horsepower per cubic inch displacement.

From these tests it appears that one of the most critical points in future high output engine design is the development of spark plugs which will resist pre-ignition and still be hot enough to resist carbon fouling. The problem of development of spark plugs for high output engines is thus seen to be a very difficult one since the two conditions named above are directly contradictory and plugs which are notoriously cold are also notoriously bad from the fouling standpoint.

Upon completion of satisfactory single-cylinder tests the multi-cylinder design is carried through, and the soundness of the design depends, to a great extent, upon the assumptions made as a basis for design. One example, serving to illustrate this point, is the design of the wartime Liberty engine. The designers of this engine were under the impression that changing the cylinder angle from sixty degrees to forty-five degrees would virtually eliminate torsional resonance of the crankshaft. It was, however, found that a fifty-hour full-power test could not be run on this engine at its designed speed of 1700 r.p.m. This was because of an extremely severe critical torsional period in the crankshaft at about 1700 r.p.m. It was also discovered that there was a rough spot in the neighborhood of 1300 to 1330 r.p.m., and under these conditions several crankshafts were broken when using fixed propellers which held the take-off speed of the engine down in this range. These failures were attributed to torsional vibration, but very little was known by the Air Corps of this phenomenon until the Division developed a torsiometer and made an intensive study of the problem of torsional vibration in aircraft engine crankshafts. During these tests it was learned that the crankshaft vibrates in resonance with the power impulses showing six distinct vibrations per revolution at 1000 r.p.m., and vibrates at a rate of 4½ vibrations per revolution at 1330 r.p.m., and 3½ vibrations per revolution at 1710 r.p.m. Under all of these conditions the frequency of the system was

100 vibrations per second.

The knowledge gained from these tests, as well as the study of all available published data on torsional vibration, has enabled the engine designers to predict with considerable accuracy the location and even the magnitude of these torsional periods. It is, therefore, no longer necessary to design engines without regard to this most important factor, and methods are available for so placing these resonant speeds, or eliminating them entirely, that future engines will clearly be much freer from crankshaft trouble due to torsional vibration than has been the experience of the Air Corps in the past.

The Division expects to have available within the next year or so, one or more engines of considerably increased horsepower over those in present use and whose weight per horsepower will be less. These engines are equipped with geared superchargers for maintaining the sea-level rating of the engine at about 1000 feet altitude and will depend for their altitude performance upon suitable installation of turbo superchargers. At least two of these engines are so designed that they can be operated in either direction of rotation by making suitable changes within the engine and thus the right and left hand engines of a two-engine installation can be operated in opposite directions, thus minimizing the effect of engine torque upon the control properties of the airplane. It is realized that much still remains to be done before these power plants are fully developed, but at least it is felt that intelligent steps have been and are being taken to insure that the future development of power plants for the Air Corps shall not lag behind those of other countries.

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SITTING ON TOP OF A VOLCANO

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much like water going over Niagara does, from the air. This apparently bottomless crack into which a veritable river of lava poured, and was forthwith swallowed forever from view, was one of the most impressive sights of the eruption.

To see these huge fountains of lava playing hundreds of feet into the air and the molten rock flowing down the mountain side with the snow-covered crest of Mauna Kea only 1500 feet above was a marvelous sight.

To shiver in a P-12 at 13,000 feet and then fly through the column of heated air rising from the volcano so hot that it felt warm to the face was a unique experience. To fly into the nauseous humidity of the sulphur fumes was dangerous, but to witness the phenomenal exhibition of a volcano in full eruption and be able to inspect it in detail from every angle from the air was a privilege to be enjoyed no place in the Air Corps except as an incident to service in Hawaii.

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AERIAL GUNNERY BY ATTACK GROUP PERSONNEL

The 90th Attack Squadron departed from Barksdale Field at 1:06 p.m., November 23rd, for the aerial gunnery camp at Chapman Field, Miami, Fla. The squadron consisted of 9 A-12's, 2 C-14's and one C-15. After an overnight stop at Maxwell Field, the journey to Miami was resumed the next day, and Chapman Field was reached at 3:40 p.m.

The 71st Squadron (Service) was at that time stationed temporarily at Chapman Field to service the organizations ordered there for the gunnery work and to aid in preparing for the GHQ Air Force concentration. Much of the work they were required to do was to remedy damage that the recent storm had done to Chapman Field, and they were busily engaged in rebuilding, cleaning up debris, etc.

The 13th Attack Squadron had been engaged in gunnery work for the previous ten days and, having completed their firing, they departed from Chapman Field the morning after the arrival of the 90th Squadron. The gunnery operations of the 90th Squadron started immediately on the departure of the 13th Squadron, beginning each morning at 7:30 a.m. and lasting through the day until about 5:30 p.m., when darkness prevented further firing. This schedule was maintained through the 27th, in order to complete this training before Thanksgiving and thus have two days for maintenance of the airplanes prior to the concentration of the GHQ Air Force. The firing was completed Wednesday afternoon, all aerial gunners and all regular officers having fired the course.

In the firing, 26,665 rounds were expended; 8 old type tow targets were used for the preliminary work, and 35 new high speed targets were used for record fire. The average score for the rear seat gunners was 1130 out of a possible 1900. Sergeant Henry and Private Jones tied for high score of 1450. Twenty-six aerial gunners fired the course.

There were no engine failures during the firing, and maintenance difficulties both on flying equipment and guns were low. The weather during the firing was clear but cool. Several nights in the unheated tents were decidedly uncomfortable, but it seems that "Unusual" weather is the rule rather than the exception when extended trips are made by Air Corps units.

THE ALL-AMERICAN AIR RACES AT MIAMI

Miami's 8th Annual All-American Air Maneuvers opened earlier this year, being staged at the Municipal Airport of the Florida winter resort for a period of three days, beginning Thursday, December 12th, instead of early in January, as was heretofore customary. The officials of the Air Meet claimed the opening day was a complete success, the attendance breaking previous first-day marks.

As usual, the Air Meet was featured by races between civilian pilots; thrilling exhibitions of acrobatics by individuals and military 3-men teams; mass flights by Army Air Corps combat planes, parachute jumps, etc. The airplanes which were pitted against each other in some of the racing events were of the small types, which occasioned the appearance in print of such terms as "Flea" and "Louse".

The Meet opened with sensational flying feats by Harold Neuman, of Moline, Ill., who gave a masterful exhibition of high speed acrobatics in his "Miss Chevrolet", a low-wing, open cockpit plane, in which at one time it was estimated he reached a speed of more than 300 miles per hour as he whizzed past the grandstands at the end of a power dive.

Shortly after Neuman landed, the Army GHQ Air Force Bombers took to the air, steadily gained altitude and formation, circled, and left the airport.

Three airplanes then flashed into sight, which were recognized as the U.S. Navy "Hell Divers". Lieut.Commander K.C. Gehres was the leader of the team, and his two companions were Lieuts. Jack Raby and J. Lewis. One intricate maneuver followed another in rapid succession - loops, barrel rolls, power dives, Immelman turns, snap rolls, followed by straight-line flying at top speed.

Sixteen Army Bombardment planes came up from the south in squadron formation. They were part of the Army air armada which had concentrated for the GHQ Air Force maneuvers in southern Florida. Bucking a head wind of about 30 miles per hour after their turn, the Bombers showed excellent precision in mass formation. Their turns were something new to most spectators, as in series of threes they changed their course. They landed after a series of mass formation exhibitions.

The event next on the program was a 15-mile race for C licensed open cockpit planes of 550 cubic-inch displacement or less. Tex Rankin, veteran pilot of Portland, Oregon, and Cincinnati, Ohio, holder of the world's record for consecutive outside loops, took an early lead and was never headed. He covered the distance at an average speed of 104.547 miles per hour. Four other pilots finished in this race.

Ben F. Stegall, of Savannah, Ga., over the same speed course, was winner of Peruvian government trophy race for C licensed open cockpit planes of 800 cubic inch displacement or less, averaging a speed of 155.19 m.p.h. He was presented with a magnificant specimen of the silversmith's art by the Peruvian Consul in Miami.

Then came, perhaps, the greatest exhibition of single acrobatic work seen in Miami, when Captain Len Povey, chief of instructors of the Cuban Air Force, exhibited great daring and ability in putting his tiny airplane through intricate maneuvers reminiscent of the late Freddy Lund. Captain Povey headed a delegation of fliers from the Republic of Cuba. The Air Corps of that Republic is relatively a new institution, but it has distinguished itself for efficiency under the tutelage of Captain Povey, who has been instructor since the organization of the Corps. The young American pilot a few years ago was summoned to Cuba to train Cuban fliers in the art and science of aviation. He received his training at Mitchel Field, and afterwards was associated with famous civilian acrobatic fliers, such as Freddy Lund, Johnny Livingstone and Art Davis. He has already trained two classes of Cuban fliers and about 15 of his students are finished pilots in the Cuban Air Force. The Cuban Air Corps instructor staged every known "trick in the bag" and added a few thrills as he thought of them.

There was a great surge of approval when the crowd recognized the Army's "Three Men on a Flying Trapese", as they speeded over the edge of the airport. These expert Army fliers from Maxwell Field, Ala., Major Claire L. Chennault, Air Corps, 1st Lieuts. J.H. Williamson and Wm.C. McDonald, Air Reserve, again staged the "stunts" which brought world fame to themselves and renoun to the military service which they represented. Their work included the longest series of maneuvers ever presented in Miami. One spectacular feat was a roll within a roll in which the planes revolved around each other while barrel rolling individually. The expertness of this maneuver brought cheers from the crowd. Then, too, there were the half rolls while completing a loop and Immelman turns. These marvelous turns, at the top of a loop, pulled in V formation, were amazing. They ended their work by speeding across the field in a very tight formation.

Harold Neuman and Gordon Mougey went aloft in their biplanes to give an exhibition of sky writing which ended in daring precision acrobatics.

The closing event of the day was formation and precision flying by 18 Attack planes, Army Air Corps, under the leadership of Major William N. Amis. Army Pursuit ships, scheduled for a demonstration as the final event of the day, were kept on the ground when a threatened squall was reported. Several other events were called off because of the prevailing high winds.

Spectators attending the All-American Races on the second day, Friday, December 13th, were afforded even more thrills than those who journeyed out to the Miami Airport on the first day, for weather conditions, although still windy, permitted the complete program to be staged. The Army team "The Men on the Flying Trapeze", the Navy "Hell Divers", and the individual acrobatic fliers, Tex Rankin and Captain Len Povey, repeated their amazing flying feats, and these were supplemented by an exhibition of what the papers termed "crazy" flying by Captain Dick Granere, Canadian ace, one of the world's foremost exponents of eccentric flying; an almost similar exhibition of that type of flying by a comedy team which went under the name of the "Three Mugs of Beer", a startling display of acrobatics and accuracy in bomb dropping by Major Al Williams, and a delayed parachute jump by Clem Sohn, Lansing, Mich., "bat-wing" man, who came hurtling earthward from a plane 10,000 feet in the air to open his parachute when only 800 feet from the field. As one newspaper put it, the pilots made their planes do everything except "sit up and beg".

What Captain Granere did not accomplish with his plane would make only a short story, for he presented everything in "crazy" acrobatics that could be done. He pulled side-slips with reckless abandon from heights of only 30 feet, with his plane having the appearance of flying side-ways for long distances, and careened in wobbly fashion against head winds. Banks were executed with wing tips "scratching" the ground; and climbs to a stall and nose dives seemed to be just ordinary routine in a day's work.

Lieut. Karl Voelter, leader; Charles P. Darnes and L.A. Heard, the "Three Mugs of Beer", were attired in such fanciful costumes as to bring roars of merriment from the crowd. The aerial antics of this team were just about as "crazy" as those of Capt. Granere, shooting their small planes around the airport in a series of loops, nose dives and wing wobbling spurts of what not to do in flying.

Top speed in racing events was made by Douglas Fonda, New York, who piloted his Beechcraft cabin biplane around the triangular five-mile closed course three times at an average speed of 161.923 miles per hour to win the Glenn H. Curtiss Trophy.

The first race on the program, also a 15-mile event, was won by Larry Cook, Lakeland, Fla., piloting a Monocoupe at an average speed of 66.619 miles an hour. The Curtiss Trophy Race was for C licensed cabin planes of 550-cubic-inch displacement, and the other event was for smaller planes.

The Army Bombardment planes took off at the finish of the first race and went through the paces in precision flying. Wing to wing and in V-shaped formations, they shot past the grandstands, circled in position and returned in bombing groups.

Later on in the program, 18 Attack planes winged their way across the field, gained the necessary altitude, turned and swept past the spectators at top speed in perfect alignment, drawing applause for the exactness of their flight and the power shown in their speed.

As the final event of the day, 36 Army Pursuit planes took off, and never has Miami Air Meet crowds witnessed such a mass flight of intricate maneuvering. These planes completely filled the air over the airport, performing a varied assortment of acrobatics in rapid succession. At one time they maneuvered in a complete circle at about 200 miles an hour and came out of it to go through a gigantic figure eight. Immelman turns were precise and cross-cuts showed high skill. This climax to the air show was ended with single line power dives, in which each pilot executed a snap roll at the end.

Hard-flying military and civilian pilots made "happy landings" in the closing events of the Miami All-American Air Maneuvers.

A low ceiling, with clouds only 1,300 feet above the Municipal Airport, somewhat curtailed the program, but there were plenty of acrobatics and precision flights in formation to hold the attention of most of the spectators until the final event was presented.

Tex Rankin spiraled down from the skies with a new unofficial American record for altitude. His instruments showed that he had reached 19,800 feet to top the previous American record of 18,543 feet, made in September, 1929, by Wilfred G. Moore at Kansas City, Mo.

Racing pilots flashed greater speed than on the two previous days. Top speed was set by R.A. Kling, Lemont, Ill., when he flew his Keith-Ryder plane three times around the five-mile course at an average speed of 239.994 m.p.h., to win the Green Trophy Race, a free for all event for planes of 550 cubic inch displacement or less.

The Dominican Republic Trophy Race of 15 miles brought out the fast time of 232.294 miles an hour, when Art Chester, Glenview, Ill., in his Chester Special low-wing craft, nosed out Kling to take first place. In the previous race, Kling just nosed out Chester, so honors between them were even.

Chester also won the Shell Trophy Race

of 30 miles, negotiating the closed course at an average speed of 229.5 miles per hour.

The Cuban Trophy Race was won by Ben F. Stegall, who covered the course at the rate of 165.117 miles per hour.

A free for all event for open cockpit or cabin planes of 200 cubic inch displacement was won by Clarence McArthur, of Tampa, who piloted his Tilbury Flash at an average speed of 105.144 miles per hour.

Harold Neuman, the Navy "Hell Divers", Capt. Dick Granere, Major Al Williams, the Army's "Three Men on a Flying Trapese", the comedy team of "Three Mugs of Beer", the 36 Army Pursuit planes and the Army Attack planes, each performed their special functions with neatness and dispatch. Low clouds prevented Captain Povey and Clem Sohn staging their particular specialties.

The three-day air show was completed without major mishap. The closing event was the annual aeronautical ball at the Miami Biltmore Country Club in Coral Gables - a brilliant final touch.

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SIDE LIGHTS ON THE MIAMI ALL-AMERICAN AIR RACES

The Army's "Three Men on a Flying Trapese" won the Miami Trophy in recognition of their acrobatic flying, while Major Al Williams won the individual acrobatic trophy. Captain Len Povey won the Mexican Trophy for outstanding flying by a foreign participant.

Ben King, Washington sportsman-pilot, prior to the start of the Air Races, established two new marks for speed, over a closed course of 500 and 100 kilometers, for seaplanes of weight less than 551 pounds. He negotiated the 500-kilometer distance at an average speed of 70.48 m.p.h. Later he flew 100 kilometers at an average speed of 80.931 m.p.h. These two records will become official as soon as they are recognized by the Federation Aeronautique Internationale.

General Frank M. Andrews was initiated Chief Warhawk at the annual meeting of the Arsenickers, the Army fliers' social organization, succeeding Colonel Charles H. Danforth, former Assistant to the Chief of the Air Corps. Captain William V. Andrews, commanding officer of Chapman Field, was in charge of the ceremony, which was witnessed by nearly 500 Army fliers and guests.

On Friday, the 13th, after his daring free fall of some 9,000 feet before he yanked the rip-cord of his parachute, Clem Sohn faced more peril when he touched terra firma in the near vicinity of Army Attack planes warming up preparatory to taking off. The suction of the motors prevented the parachute closing and drew it towards the whirling propellers. Quick thinking field workers, sensing the danger, rushed across the field in motorcycles, automobile trucks and on foot. While some grabbed Sohn, others rushed to the billowing parachute to crush it to the ground.

The Air Maneuvers were moved up a month in order not to conflict with the seasonal activities, and also as an encouragement to December visitors. The idea has taken hold better than was anticipated.

The tiny lark of the air, the Crosley "Flea", expected to cut considerable capers in the Meet, came to grief just before the show opened, when a strong gust of wind whipped it around and damaged it to such an extent that repairs could not be made in time. Its pilot, Eddie Nirmaier, was not injured.

Colonel John H. Jouett, technical aviation adviser for the Standard Oil Co., was one of the busiest officials at the Air Meet, serving in the capacity of chief of operations. One of the Miami papers stated:"Col. Jouett participated in the first race of the first of these Miami air maneuvers and hasn't missed one since. He has just returned after three years in China as aviation adviser to the Chinese Government."Quick, Watson, the needle!

Col. J. Carroll Cone, Assistant Director of the Bureau of Air Commerce,Department of Commerce,Washington,was elected President of the World War Birds at the annual meeting of this organization at Miami on Dec. 12th, succeeding Colonel Edward Rickenbacker. Col. Cone flew with the 130th Pursuit Squadron in France during the War.

Captain Harlan W. Holden,Air Corps, on duty in the Office of the Chief of the Air Corps, served as Liaison Officer between headquarters, Columbus Hotel, and the military visitors at the Air Meet. Capt. Holden has filled this position during the maneuvers for the past several years. He was assisted by Captain A.C. Kincaid, also on duty in the Office of the Chief of the Air Corps.

Major Robert Olds, on duty with the GHQ Air Force at Langley Field, was the man at the "Mike" explaining the flying evolutions of the Army planes during the Meet.

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AIRMEN IN PHILIPPINES ESCORT CHINA CLIPPER

The 3rd Pursuit Squadron, Clark Field, P.I., shared in the thrills of welcome and joined the Group escort for the China Clipper as she came into Manila on her initial flight. Members of the Squadron were invited by the Clipper's pilot,Capt. Musick, to go aboard and inspect it while it was anchored in Manila Bay.

Commissioner Murphy.

On November 20th, the entire Group took part in a farewell flight for Vice President Garner and the members of the Congressional party departing on the S.S. PRESIDENT JEFFERSON. The planes escorted the ship out of the harbor and dropped farewell messages on the deck.

On November 30th, the Group provided an escort for the Pan-American flying boat "China Clipper," upon her arrival in Manila with the first air mail from the United States. The flight, consisting of six each P-12B's and O-19C's and four B-3A's, led by Lieut.-Col.A.L. Sneed, Group Commander. The planes passed in review just as the "Clipper" appeared overhead, then circled until the flying boat settled to the water thirty minutes later.

On December 11th, the entire Group conducted a farewell flight over Manila Bay in honor of the departing Department Commander, Major-General Frank Parker, who sailed on the S.S. PRESIDENT HARRISON.

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BARKSDALE FIELD PERSONNEL IN FLORIDA MANEUVERS

The 90th Attack Squadron, brought to full strength in personnel and equipment by attachments from other organizations of the 3rd Attack Group, arrived at Fort Pierce, Fla., on December 2nd. The airdrome was prepared for occupancy by the 59th Service Squadron from Langley Field, Va.

A brief description of the tactical set-up and operations is fitting: The 90th Attack Squadron operated directly under the Headquarters, 3rd Wing, GHQ, at Fort Pierce. The Wing was provided with teletype and radio communications to Headquarters, GHQ Air Force, at Chapman Field, Miami. Abbreviated Field Orders were transmitted to the Wing by teletype, thence communicated to the Squadron which performed the mission.

War time conditions were simulated as closely as possible at all times. Of the three flights in the squadron, two were scheduled for each mission, the other remaining in readiness. Missions averaged two per day. Airplanes were dispersed over the entire airdrome, necessitating that take-offs and assemblies be made under the most difficult conditions. After practice, two flights were regularly able to clear the airdrome by single plane in five minutes and land the same way in four minutes.

And now a word about the master spy who stuck with us so consistently to the glory of our pursuit opponents, resumes the News Letter correspondent. Equipped with an A-12 airplane, he was with us on every mission. He "squealed" on our take-offs; he faithfully radioed to Pursuit Headquarters our location, altitude, numbers, ground speed and direction of travel at three-minute intervals. Received at Pursuit Headquarters, these reported positions were plotted on a gridded map and resultant interception directions transmitted by radio to the Pursuit flight in the air. As a word of explanation, if not expiation, the master spy simulated about 500 farmer observers stationed at regularly spaced intervals on concentric circles originating at Miami and sweeping through a 100-mile radius. Their combined knowledge can only be compared to a tree full of owls. Still one would not envy even such knowledgable farmers if he had to live in the middle of Lake Okeechobee.

The 90th Squadron is proud of its record of having completed the maneuvers with no major mishaps. One airplane nosing up, with injury only to the propeller, constituted the one untoward happening. As we turn the pages in the "March of Time," the 90th Squadron will remember Fort Pierce for the genuine friendships developed with its citizens, whose concoctions of native fruit juices were so freely offered to wash dry sand from the throats of camp weary flyers. To them, and Au revoir!

The 77th Pursuit Squadron departed from Barksdale Field on December 1st for Miami Municipal Airport for participation in the GHQ Air Force concentration and maneuvers. This Squadron and the 27th Pursuit Squadron, 1st Pursuit Group, attached, composed the 20th Pursuit Group. The primary mission of the Pursuit squadron was the defense of Miami against Bombardment and Attack Aviation. It seemed to all pilots, however, that the most important mission was that of fighting sand. There was sand on the ground, sand in the air, sand in the food and sand in the beds. There were pilots on the concentration that believed they were in the Foreign Legion and were matching their wits against the desert sand of Africa.

During the concentration at the Municipal Airport, Lieut. Desmond, of the 77th, made a forced landing in a P-26 at Dania, Fla. Upon landing, it nosed over and washed out the plane. Fortunately, Lieut. Desmond came out without a scratch. Lieut. Bordeno lost his battle with the sand, and while taxying across the field at the Airport, nosed his P-26 up, but the only damage reported was that done to the propeller.

Crew chiefs on this maneuver worked as they have never worked before. There were two airplanes for each mechanic to crew and keep in the air. This was extremely difficult, as the airplanes were on the alert a great part of the time that they were not in the air. Considering all of this, the maintenance was done very well. The airplanes were kept flying and were ready to start for Barksdale when the maneuvers ended.

After the Air Force Maneuvers were over, the officers moved to the Floridian Hotel and there proceeded to get clean for the first time in 10 days.

The weather was unfavorable two of the three days set for the All-American Air Races and Maneuvers, so this Squadron maneuvered only one day before the grandstand at the Airport.

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For the benefit of News Letter readers who are not acquainted with the Air Corps officers pictured on the insert accompanying the article on the GHQ Air Force Maneuvers in Florida, their names are given below, as follows:

Top center: Brigadier-General Henry C. Pratt; center of page, left to right: Brigadier-General Gerald C. Brant, Major-General Frank M. Andrews, Brigadier-General Henry H. Arnold; bottom of page, left to right: Lieut.-Colonel Millard F. Harmon, Colonel Hugh K. Knerr, Lieut.-Colonel Clarence L. Tinker.

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Thanks to Messrs. Bob Fitzgerald and Lee Gregg of the Materiel Division. They produced the cover for this issue of the News Letter.

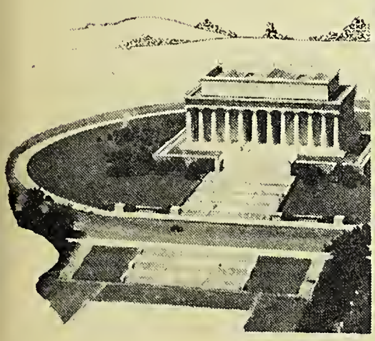
IN MEMORIAM

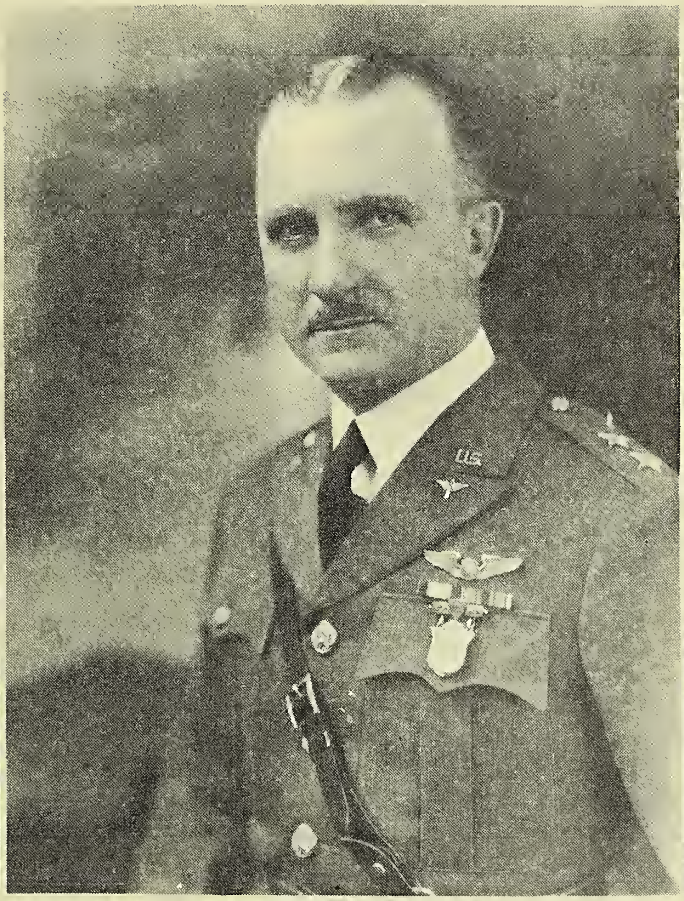
1899 MAJOR ARTHUR K. LADD 1935

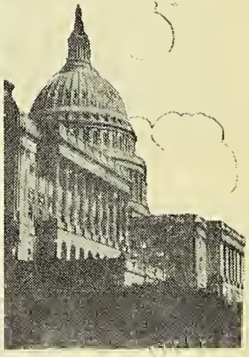
Our comrade still in our flights of memory.

AIR CORPS NEWS LETTER

Issued by the office of the Chief of the Air Corps
War Department, Washington, D.C.







MAJOR GENERAL OSCAR WESTOVER
THE NEW CHIEF OF THE AIR CORPS

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VOL. XIX AIR CORPS NEWS LETTER NO. 3.

Information Division
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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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DEFENSE AGAINST AIR ATTACK

By Major-General Oscar Westover,
Chief of the Air Corps

Defense against air attack assumes for the Continental United States many special features not applicable to countries with a different geographical situation. The discussion which follows is based primarily upon our own geographical situation. In discussing measures to provide against aircraft attack they may be conveniently divided into two categories:

First - Measures principally *defensive*, including:
a. Dispersion (Security)
b. Frequent changes of base (Movement)
c. Concealment
d. Bomb and gas-proof shelters

Second - Measures principally *offensive*, including:
a. Attack against the enemy's aircraft bases
b. Attack against aircraft in the air
c. Attack against lines of aircraft supply and aircraft communications.
d. Ground antiaircraft defense.

The principal basis for defense against air attack is the network of civil airports, extending into all the strategic areas of the Continental United States. The adequacy of these airports to support the operations of our own defensive forces will largely determine the effectiveness of the defense.

The United States is fortunately situated in possessing, in most areas, an adequate number of civil airports for the purposes of defense. In several strategic areas, due to sparsity of population and consequent lack of demand for them, the civil airports are inadequate in number at the present time to satisfy the full operating requirements of our defensive air forces, in the event one or the other of these areas became the principal objective of an enemy's air attack.

The discussion in Congress last year on the "Wilcox Bill," (since enacted into law) definitely indicated that the purpose of that legislation is to encourage the provision of sufficient air base facilities in the principal strategic areas of the United States, adequately to take care of any requirement of defense against air attack.

Since the approval of the above legislation by the President, the War Department has had a Special Committee studying the requirements for air bases. It may be expected that, as a result of this study, the War Department soon will be in a position to formulate a program which, when carried out, will place the United States in a favorable position to maintain an effective defense against air attack.

Two of the principally defensive measures to provide against air attack require the existence of numerous airports to make them fully effective. These are dispersion and frequent changes of base. Where large defensive air forces are operating, a considerable number of airports are required to permit the desirable amount of dispersion of the air units. The fewer the number of planes located on a given airdrome the less remunerative is the target they present to enemy air attack.

A large number of airports available also permits frequent changes in locations of the operating units, so that one day an airport may be occupied and the next day not. This tends to render extremely difficult the attack operations of enemy aircraft. This same multiplicity of airports favors the third device of defense - concealment. With a large number of airports available, some of which are in use and some unoccupied, and with frequent shifts in this status, the concealment of airplanes is more apt to succeed, since the enemy may assume that an airport where airplanes are well concealed is not in use.

The ability of the defending air forces to avoid presenting to enemy aircraft attacks, targets which will prove remunerative may react to introduce a situation of primary concern to the civilian population. An enemy thwarted in his efforts to secure results in attacks against our air establishments may turn to other targets more easily located and offering greater return. Among such targets are aircraft and munitions factories, water supply, gasoline storages, railroad tunnels and bridges, and electric power plants. Since most of these installations were constructed before the era when air attack was a prime consideration, the defensive possibilities in these cases have not been developed. Perhaps the greatest resources now available in this respect are camouflage and other forms of concealment from an overhead observer. From their nature some of these installations are difficult to conceal or camouflage. It will require intensive study of the possibilities to arrive at satisfactory solutions to these problems. However, the importance of gaining every possible protection against air attack will warrant the effort required to arrive at a satisfactory solution to this problem.

These considerations may arouse in the minds of civilians thoughts of the possible consequences to them of a serious air attack. It is true that, due to our more isolated position, the extreme measures which we read are being resorted to abroad to secure adequate protection from air attack may not be demanded in our own case. However, a certain amount of training of the civilian population as to the nature of aircraft attack and as to the available means of defense against same may greatly minimize the effects of such air attacks.

At this point the trained student of military affairs will pause in despair at the vision of the passive defensive measures which may possibly be demanded by the hundreds of cities open to air attack. This vision includes hundreds of set-ups of expensive antiaircraft guns and machine guns, barrage balloons, smoke-laying airplanes, bomb and gas-proof shelters, vast alarm and communication systems, and millions of gas masks.

The impracticability of providing these passive defense measures on such a huge scale suggests a turn to the consideration of the offensive form of defense. In the first place, if we possess an adequate number of aircraft for our defense, the enemy attacks are more apt to be directed against air bases than against cities, since one of the most important principles of war is that an enemy's main force is the principal objective. On the other hand, if we, on the defensive, operate offensively to destroy the enemy's means of attack, this is a far more effective way of reducing the consequences of such attack than to employ merely passive measures to lessen its effects.

It appears desirable, therefore, to develop a system of defense against aircraft attack in which the principal reliance is placed upon our own aircraft to destroy the enemy's attacking forces, rather than upon passive defensive measures to minimize the consequences of air attack. We require a system wherein soldiers, and not civilians, will bear the brunt of the enemy's fire. We should avoid an unbalanced air defense having too many purely defensive features and too few offensive powers.

BOMBING OF A LAVA FLOW

The 23rd Bombardment Squadron, stationed at Luke Field, T.H., spent a busy Christmas Day preparing to fly to Hilo to bomb the lava flow that was threatening that city. The take-off was made at 8:30 a.m. on December 26th. After arriving at Hilo, the remainder of the day was spent by bombing teams in flying over the flow and having the exact place to bomb pointed out to them by Dr. Jaggar, Volcanologist of the Hawaii National Park.

Actual bombing began on Friday, the 27th. Each plane carried two 300-lb. practice bombs to use as sighting shots and two 600-lb. demolition bombs to use for effect. Bombing conditions were very unusual. The target was at 8,500 feet, and the planes could go to 12,000 feet with their heavy loads. In spite of these conditions, accuracy was very good. Ground observers reported that all twenty of the big bombs scored direct hits.

The results of the bombing were perfect. The flow, which had been advancing about a mile a day, slowed the day after the bombing and now, one week after the bombing, has practically stopped. The Squadron is very proud of the part it took in the first bombing of a live lava flow in history and delighted that the results were so evident.

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PRAISE FOR RESCUE WORK OF ARMY OFFICERS

The extraordinary heroism of Lieuts. Leonard F. Harman, Air Corps, of Boise, Idaho, and Robert K. Giovannoli, Air Corps, of Lexington, Ky., in rescuing the injured survivors of the recent crash of a large Boeing Bomber at Wright Field, Dayton, O., was attested by a testimonial submitted recently to Secretary of War George H. Dern by the employees of the Boeing Aircraft Co., of Seattle, Wash. The testimonial, in the form of a parchment scroll, is signed by every employee of the Boeing Company.

In the fatal accident which occurred on Oct. 30, 1935, Major Ployer P. Hill, distinguished Army pilot, and Leslie R. Tower, test pilot of the Boeing Co., were fatally hurt, and three other members of the crew were critically injured. When the big plane crashed and burst into flames, Lts. Harman and Giovannoli rushed to the scene of the accident. Disregarding their personal safety, they plunged into the flames repeatedly and rescued the injured members of the crew. Both officers were painfully burned, but continued their rescue work until all persons in the plane were removed.

In transmitting the Boeing testimonial to Major-General Oscar Westover, Chief of the Air Corps, Secretary Dern added his personal and official commendation of the two officers for courageously risking their own lives in the rescue.

NOTES ON FLYING WEATHER

By 1st Lieut. W. H. Wenstrom, Signal Corps

Cloud Forms

While clouds take many forms, most of them can be classified under four main types: stratus, cumulus, nimbus and cirrus. The kinds of clouds present in the sky are often closely related to the existing weather situation and serve to distinguish, particularly, between typical warm front and cold front conditions.

Stratus clouds are flat and layer-like, extending horizontally rather than vertically. They represent stable air conditions, without much vertical convection, and are usually associated with warm fronts. Occasionally they occur at low altitude in a warm air mass, taking the form of fog. Their height varies greatly, as they can occur at all levels between the surface and about three miles aloft.

Cumulus clouds are piled-up and puffy in appearance, resembling "woolpacks" or Cauliflowers. They extend vertically rather than horizontally, and represent unstable air conditions, usually occurring along cold fronts and within unstable air masses particularly when solar heating is intelse. The height of their bases is often around 2,000 feet, though it may be much higher. Their tops are usually below 15,000 feet, though in the form of overgrown thunderstorms they may occasionally extend to 25,000 feet or even higher. In a warm, moist (tropical maritime) air mass, large cumulus clouds usually develop during the morning, growing into thunderstorms in the afternoon.

The term nimbus is applied to any cloud from which precipitation is falling. It is usually a large, irregular mass in the region of heavy rain or snow but elsewhere it may take either stratus or cumulus form, depending on the stability of the air mass involved.

Cirrus clouds (also cirro-stratus and cirro-cumulus) are relatively thin and white in appearance. They occur far above ordinary flying levels at heights of five or six miles. The true cirrus, or "mare's tails" are fibrous in appearance and stream out in the direction of the upper winds.

Turbulence.

Turbulence results from the deflection of wind by terrain features, from vertical currents in the atmosphere, and from gustiness (or variations in wind direction and velocity). All three causes are at least partly related, and all tend to make the air "bumpy" for flying. Ordinarily this bumpiness is a matter of no concern to a qualified pilot flying dependable equipment, but under certain circumstances it can be inconvenient or even dangerous.

Wind deflection by terrain features is most pronounced in high winds blowing over and around a large and abrupt obstruction. Rising currents on the windward slopes of mountain ranges are well known, and are sometimes used for soaring. Downward currents to leeward of mountains are equally common and likely to be more embarrassing to flyers. The more jagged and angular the obstruction is, the more violent will the resulting disturbance be; and this disturbance may include, besides simple down drafts, various irregular eddies and vortices. In certain extreme situations around high mountains these eddies are likely to take the form of air "waterfalls," with turbulence so excessive that structural damage is likely and downward currents so strong that no airplane can maintain altitude in them.

Artificial terrain features such as large buildings can also cause powerful eddies. The immediate vicinity of any large bulk such as an airship hangar should be approached with care. As airship hangars are often situated close to flying fields, it is not unusual for pilots to encounter their eddies at relatively low speed while landing or taking off, with occasionally embarrassing results.

Aside from these terrain effects, violent rising and falling currents can be set up in free air that is moist enough and unstable enough. These rising currents are usually marked by cumulus clouds; and the larger and higher the clouds are, the more violent their currents are likely to be. In some towering thunderstorms which produce large hail, fortunately rare, it is certain that the rising currents exceed 100 miles per hour. Sudden transition from a downward current into an updraft of this order would probably wreck any airplane built at present. The turbulence associated with cumulus clouds can be at least partly avoided by flying rather low, well below the ceiling; or by flying as high as possible - say, above 10,000 feet - where the updrafts have lost much of their force in rapidly thinning air. The middle region, just below the ceiling and for some distance above it, is usually the turbulence maximum.

Thunderstorms.

Thunderstorms are overgrown cumulus clouds in which condensation of moisture and spattering of water droplets have gone far enough to set up large electrical charges. Everything that has been said about cumulus clouds, therefore, applies with more emphasis to thunderstorms. In addition, the thunderstorm has certain dangers peculiar to itself.

The chances of lightning actually striking an airplane in a thunderstorm appear to be somewhat greater than the chances of its striking a vehicle on the ground, because many more flashes occur in and between clouds than between clouds and earth. (Also, high voltages are induced in metallic conductors by flashes that pass nearby without striking). In any case, the electrical hazard is probably slight. It exists, and anything but a large, metal-clad transport would probably be rendered uncontrollable or otherwise destroyed by a direct hit.

The turbulence in a large thunderstorm is excessive, and there is always the possibility that it may be accompanied by destructive hail. Even light hail would soon incapacitate a fabric-covered airplane, and the larger hailstones would probably tear up a metal transport. As in ordinary cumulus clouds, the least turbulent flying levels are very low or very high, but in a thunderstorm both have disadvantages. A large storm extends to such heights (20,000 feet or more) that it is almost impossible to fly over, and there may be severe icing up where the temperatures are around freezing. If the storm is moving rapidly, the lower levels may be disturbed by violent and variable winds. The "squall wind" blows outward from the storm at the ground, and just above this a counter current may blow inward towards the storm. A large horizontal whirl of air is thus produced, somewhat similar in action to the revolving brush of a street sweeper. Such a formation, needless to say, endangers an airplane close to the ground.

As "air mass" thunderstorms are usually scattered, it is easy to fly around them in the daytime. Such avoidance is certainly desirable. The fact that a pilot has already flown successfully through one or more thunderstorms proves very little about his ability to fly through the next one, which may be organized on a different order. At night, it is much more difficult to pick open spaces between storms, and night flights should usually be grounded in the presence of widespread thunderstorm activity. Nor should flights be cleared at any time into thunderstorms of the "frontal" type. Along a marked cold front between polar and tropical marine air, for example, these storms may be ranged into a continuous line that cannot be flown through.

Tornadoes and waterspouts are similar phenomena that sometimes occur during marked thunderstorm conditions. They can be distinguished at a distance, unless hidden by lower clouds or dust, by the characteristic funnel-shaped cloud, which hangs down from the main cloud deck above and usually writhes along at twenty to forty miles per hour, spreading destruction over a narrow, sinuous path. A tornado should be avoided at all costs; its gyratory currents are spinning at something like five hundred miles an hour.

Cold Fronts

Individual cold fronts vary widely. If the temperature and moisture contrasts between the displaced warm air and the displacing cold air are large, if the front is moving rapidly, and if the winds ahead of it, and behind it are high and sharply contrasted in direction, the turbulence, clouds, showers and other effects will be correspondingly violent. On the weather map such a front is marked by a deep pressure trough; the isobars are close together, and they make a sharp V-shaped bend where they cross the front. The extreme case, occurring but rarely, is a "line squall" marked by a continuous line of thunderstorms.

Although ordinary cold fronts and cold occlusions fall short of line-squall intensity, they are often accompanied by unfavorable flying conditions. The front usually extends several hundred miles from southwest to northeast, and the entire line advances steadily southeastward or eastward at a speed perhaps between fifteen and forty miles an hour. Along the front there are usually heavy showers in which ceiling and visibility may drop suddenly to dangerous values. Above, the heavy cumulus clouds are turbulent enough to make blind flying difficult and uncertain. Icing is frequent in the colder seasons, and may be severe.

When a marked cold front is approaching a flying field, airplanes should usually be grounded for a time. Within an hour or so after the frontal passage, conditions improve; first westward, and later eastward as the front and its bad weather zone move on. A pilot meeting a marked cold front on a westward flight should find a suitable landing place, giving way eastward if necessary, land, and proceed westward after frontal passage. A pilot overtaking a cold front on an eastward flight, having a better chance to test its intensity gradually, can proceed with caution, returning towards the clearing west if necessary.

Warm Fronts.

Barring icing conditions and occasional thunderstorms in tropical maritime air, warm fronts can be flown through with comparative ease unless a landing becomes necessary near the front itself. The front usually extends from northwest to south east or east, and moves slowly northeastward or northward. In the immediate frontal zone, perhaps a hundred miles or so wide, the lowering clouds may be close to the ground or even on it, and the visibility may be very poor. Ahead of the frontal zone the ceilings are higher, though lowering gradually, and the rain is light but continuous. Well behind the frontal zone the weather is usually good unless conditions favor an advection fog.

Crossing the frontal zone usually involves a fairly long stretch of blind flying; but this is not difficult, as the air distribution is usually stable and turbulence is consequently slight. With good radio contact, terminal conditions can be frequently noted. They are not likely to change very quickly. If the warm weather sector is clear, it will probably remain so. Two or three hundred miles ahead of the front, ceilings are probably ample and will lower but slowly.

Fog.

Fog, which constitutes one of the major dangers of aviation, is variously classified. There are first of all the "frontal" types; the warm front fog mentioned above, and cold front fogs that go with so much other bad weather that the fog itself becomes relatively inconsequential. Of more importance are the "air mass" fogs, which are subdivided into advection and radiation types.

Advection fogs are caused by: (a) the flow of warm, moist air above a cold surface; or (b) the flow of cold air above a warm moist surface. Only the former kind has practical importance in ordinary flying. It may result, for example, when a mass of warm, maritime air flows inland over a relatively cold land surface, perhaps following behind a warm front.

Such advection fogs, though rare, are widespread and persistent when they do occur. The fog usually extends northward or landward, driven by moderate southerly or onshore winds, perhaps covering a large area for days. Sometimes it thickens gradually over a wide region; sometimes it rolls onward like a sea of vapor. In either case, there is likely to be ample advance warning of the increasing or engulfing fog from coastal and southern stations that are first affected. An airplane can usually find clearer air by turning northward or inland, particularly if radio reports from these directions are available.

Radiation fog, unlike the advection variety, appears over land surfaces rather suddenly where no fog existed before. It is caused by the radiative cooling of the earth at night. As heat is radiated away into space, the ground temperature falls, and with it, the temperature of the air next to the ground. In hilly terrain, this cooled air tends to drain down hill, filling depressions and valleys on calm nights. When the temperature of the cooled air reaches its dewpoint, water vapor begins to condense into liquid water. In absolutely still air, this water takes the form of dew. But if some circulation has mixed the air close to the ground, distributing the lowered temperatures through the lower levels, the condensed water takes the form of fog. This fog usually forms first at the lower levels, gradually extending upward for perhaps a few hundred feet.

Radiation fog tends to form at night in the presence of three motivating factors. First, winds are light (2 to 6 miles per hour), favoring the gentle mixing of air in the lower levels. (If the winds are much above six miles an hour, warmer air is brought down from aloft, delaying the cooling process enough to prevent fog formation). Second, mostly clear skies permit the earth-radiation to escape freely into space, favoring maximum cooling. Third, the dew-point must be relatively high, so that the falling temperature will reach it during the night. An airplane pilot in flight at night can thus judge the imminence of fog from radio reports. Where there are light winds under a mostly clear sky, where the dew point is high and, most of all, where the temperature is rapidly approaching the dewpoint, fog is likely to form. When the temperature is more than two degrees above the dew point, fog is usually at least an hour or two away. When the two are equal or only one degree apart, however, fog may begin forming within the hour.

Instead of a surface fog, high fog may form if the conditions are favorable. Perhaps the temperature decreases from the ground upward for several hundred feet, then "inverts" or increases. Air at the base of the "inversion" may have the same dewpoint as the surface air, though its temperature is considerably lower. As the whole atmosphere cools, therefore, the base of the temperature inversion reaches its dewpoint first, and the fog builds rather quickly downward from several hundred feet above the ground.

Icing.

Icing is the chief danger to wintertime flying, and may occur at high altitudes even during the summer. It takes the form of ice deposits on wings, propellers, struts and other exposed parts of an airplane, chiefly near leading edges. There are three types of icing: (a) clear ice, which is the most dangerour type; (b) rime, of more granular structure, which usually forms at lower temperatures than clear ice; and (c) frost, which is relatively harmless. Rime can be cracked off by means of de-icers unless the temperature is quite low; clear ice is usually immune to such cracking. Either type is dangerous to an airplane not equipped with de-icers. Under severe icing conditions, the wings of an airplane are so heavily loaded and so distorted as air foils that the airplane loses altitude rapidly and perhaps becomes entirely unflyable.

The conditions under which icing appears in dangerous forms are (a) a temperature somewhere between 34° F and perhaps 0° F; and (b) moisture in the visible form of clouds (which are aggregations of minute water droplets), mist, rain and the like. As liquid droplets can exist at temperatures far below zero if they are not disturbed, there is no fixed lower temperature limit. At temperatures below 20°F, however, the amount of water that can exist in vapor form is considerably reduced, so that icing at lower temperatures should not be as frequent or as severe. The dangerous range, therefore, is perhaps from 32° F to about 20°F, and particularly from 32°F to 26° F.

Icing is caused in some degree by several factors. A previously chilled airplane may strike rain or cloud droplets, freezing them. Super-cooled droplets, jostled by the airplane wing, may freeze instantly. Certain areas of low pressure around an airfoil may cool the air by expansion. All these causes become minor, however, when one recollects that far more "cold" is required to freeze water than to cool it. This large latent heat of fusion can be removed only by evaporation, and it is probable that the cooling effect of evaporation (the airplane partially atomizing the water droplets that it strikes) is the major cause of icing.

Clear ice occurs chiefly where relatively warm, moist air is being rapidly lifted; that is, along active fronts. This active lifting occurs particularly along occluding fronts (where the whole warm sector is being pinched out and lifted upward), and most of all along a front that is occluding on the windward side of a mountain barrier. Under such extreme conditions, clear ice can form very fast - at the rate of about one inch per minute. No airplane so far devised can remain under control more than a few minutes when ice forms at this rate.

Rime is formed chiefly in cold air masses, where the droplets are smaller and farther apart than they are in the warm air masses that produce clear ice. As the clouds in these cold masses are usually not as high or as dense as those in warmer masses, it is often possible to climb above the rime zone. In warmer air mass clouds, rime may appear in the upper levels beyond the zone of clear ice.

The most general rule for avoiding icing is to stay out of precipitation areas and clouds in the critical temperature range. Any precipitation area having ground temperatures below 40° F may show icing at ordinary flying altitudes. If temperature in the lower levels are high enough, and other conditions permit, it is well to stay low. Otherwise, it is usually advisable to go as high as possible, where the air is colder and the possible amount of moisture in the air is less. At all times, the temperature range just below the freezing point should be avoided. In freezing weather, active fronts should be avoided, where possible, particularly near the warm sector of an occluding cyclone, and most particularly where the cyclone is occluding against a mountain barrier.

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RADIO VOLUME CONTROL IN INSTRUMENT FLYING

By the News Letter Correspondent

Problems of instrument flying confusing pilots of the 41st Division Aviation, Washington National Guard, Spokane, Wash., are gradually being solved. In the wake of the solution exist two words -"Volume Control," which is causing pilots to look with far greater importance upon the value of airplane radio equipment.

The importance of the "volume control" has been stressed in three lectures by William Strait, Assistant Chief Pilot of the Spokane-Seattle Division of the Northwest Airlines, and Major Robin A. Day, Squadron Commander.

Real assistance to the Division Aviation pilots in the matter of instrument flying has been given by Mr. Strait in a series of lectures at regular Sunday morning class periods. Mr. Strait at first discounted the use of radio - "volume control," and talked entirely on the Stark method of instrument flying. He now advises, however, that the Northwest Airlines' pilots have adopted "volume control" as a very important part of instrument flying, using it in connection with the Stark method.

"We are convinced that the volume control is very essential to instrument flying and provides the 'short cut' to quick orientation," Mr. Strait stated. "The chief thing to remember when employing volume control is not to touch your volume control. To monkey with the volume control is to defeat entirely the purpose, which is to get the 'build up' or 'dying out' of your set when approaching or leaving the station."

Division Aviation pilots practicing instrument flying have eliminated many of their difficulties since using volume control.

In connection with Northwest Airline pilots, 41st Division Aviation pilots are now making flights in an attempt to establish a system whereby multiple courses can be definitely distinguished from regular on-course signals. While the Bureau of Air Commerce, Department of Commerce, declares that multiple-courses will always lead to the station, no one here claiming any knowledge of instrument flying is willing to admit such is the case. An impression prevails that multiple-courses are found most in mountainous country, leading to the belief that multiple-courses are caused, perhaps, by the mountains. Further speculation is that the multiple-courses might lead into the mountains instead of to a radio station.

Recent days of foggy weather throughout

the Northwest have provided splendid conditions for instrument flying practice, which is done on the Department of Commerce beams to Seattle, Billings and Pendleton. In some instances the flights have been made with communications to the 41st Division Aviation ground radio station.

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FIELD EXERCISES IN HAWAII

The 23rd Bombardment Squadron, Luke Field, T.H., recently took off on a trip around the Southern Islands, in compliance with Training Memorandum No. 4, Headquarters Hawaiian Department, which requires each pilot to visit all outlying fields in the Territory once each year. After circling the Islands of Molokai, Maui and Lanai, the Squadron landed at Suiter Field, Upolu Point, Hawaii, and spent the night.

Early the following morning, the Squadron proceeded to Hilo. Here the personnel were met by transportation from the Military Camp. The rest of the day was spent in sight-seeing. Officers and men remained at the camp overnight. The following morning everyone arose early for the return flight to Luke Field. In this instance, the 23rd Squadron participated in a "Wing Communications Exercise" scheduled for that date and represented an enemy Bombardment formation enroute to attack Pearl Harbor. Early that morning the Attack, Pursuit and remaining Bombardment organizations had taken stations on the outlying fields on Oahu prepared to take the air on radio orders from Wing Headquarters.

The 4th and 50th Observation Squadrons were located on the Island of Molokai and established a constant patrol to intercept the approaching enemy formation. In spite of cloudy conditions, light showers, and stiff trade winds, the exercise was carried out as planned. The enemy bombardment formation was intercepted by an Observation patrol plane shortly after passing Lanai and was followed closely thereafter, position reports being transmitted every ten minutes. Armed with this information, the Wing Commander at the proper time issued the order for the assembly of his defensive aviation, the Pursuit to intercept and break up the attack, the Bombardment and Attack to follow the returning enemy and "sink their carrier." The Pursuit encountered the enemy Bombers in the vicinity of Koko Head and attacked with ferocity.

The intrepid pilots of the 23rd Squadton countered by assuming a close defensive formation and carried on with their mission in accordance with the best traditions of the Fifth Composite Group. This "constructive" bombing attack concluded the exercise, and all planes landed at their home station.

The exercise was planned and organized by Lieut.-Colonel Asa N. Duncan, Commanding Officer of Luke Field and the Fifth Composite Group, and his Operations Officer, Major Phillips Melville. Lieut.-Colonel John C. McDonnell, Commanding Officer of Wheeler Field and the 18th Pursuit Group, assisted by his Operations Officer, Major Clayton Bissell, acted as Wing Commander and Operations Officer, respectively. Colonel Delos C. Emmons, Commanding Officer of the 18th Composite Wing, and Lieut.-Colonel Hume Peabody functioned as umpires. The umpires pronounced the exercise a success. Much practical experience was gained by all concerned.

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A FLIGHT TESTING JOB FOR CAPTAIN FINK

Captain Rudolph Fink, on duty with the First Pursuit Group at Selfridge Field, Mt. Clemens, Mich., has been appointed Air Corps representative at the Boeing Aircraft factory, Seattle, Wash., for a period of about two months to flight test 23 P-26C airplanes being procured from that company. He recently departed for Wright Field, Dayton, Ohio, for temporary duty for the purpose of receiving instructions as to the method of testing the P-26C airplanes at the Boeing plant, and will then proceed to Seattle. Upon the completion of this temporary duty, he will ferry the last P-26C airplane to be delivered on this contract to Selfridge Field.

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MORE TREE PLANTING BY AIRCRAFT

Twice during November and once during December, 1935, the 18th Pursuit Group, Wheeler Field, T.H., made airplanes available to cooperate with the territorial government in its policy of reforestation. On each occasion, several hundred pounds of tree seeds have been scattered from the air by airplane over inaccessible terrain. The practice of utilizing airplanes for tree planting is extensively developed in Hawaii, due to the nature of the volcanic ash which forms most of the soil. It is imperative to bind it together with some type of vegetation in order to retard the very rapid erosion produced by the heavy rainfalls on the windward side of all mountain ranges. A secondary purpose is the conservation of rainfall, which is absolutely necessary if there is to be sufficient water for the irrigation of the extensive sugar cane areas.

Beginning in May, 1922, the Air Corps has made airplanes available for this purpose. In this 14-year period, over ten tons of tree seeds have been planted on the islands of Kauai, Maui and Oahu.

This method of planting has been successful, and many areas over which it would have been impractical to distribute seed by any other methods are now covered with young forests. The work has reached the point where several agencies are making the seed available to the Territory because of the indirect benefits they receive in water conservation.

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ARMY AIRMEN AID IN RESCUE WORK AT SEA

Two O-19C and two B-3A airplanes recently departed from Nichols Field, Rizal, P.I., to aid in the rescue of the fifty passengers and crew of the ill-fated motor ship "Silver Hazel" which was stranded in San Bernardino Straits. The passengers and crew had been marooned upon the fore part of the ship and a nearby rock for several days without food or shelter. All rescue attempts had failed, due to high seas, and it was intended to drop supplies from the Bombers and to try to get a line to the castaways by utilizing the tow target lines on the O-19's. However, all members of the crew and passengers had abandoned their precarious position on the ship and had taken to the water on improvised rafts before the airplanes arrived. All but two were picked up, and all but four survived the experience. The Master of the "Silver Hazel" was among those lost.

One O-19C was piloted by Lieut.-Col. A.L. Sneed, with Corporal Lorenzo P. Johnson, 2nd Squadron, Crew Chief, and the other by Lieut. H.Q. Huglin, with Private Albert E. Brechtel, 2nd Squadron, Crew Chief.

The two B-3A's were piloted by Capts. J.P. Kenny and G.W. Hansen, the former being accompanied by Staff Sergeant Samuel Gershon, Crew Chief; Sergeant Albert R. Silvers, Privates John C. Moran and Eddy E. Brassard, all of the 28th Squadron, and the latter by Sergeant Walter P. Kurtz, Crew Chief, Master Sergeant Vernon H. Merson, 6th Photo Section, and Privates Harry L. Buckley and Stewart R. Saunders of the 28th Squadron.

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MORE ABOUT THE FLIGHT OF 7TH BOMB. GROUP

The News Letter Correspondent from Hamilton Field, Calif., states that with a new record for cross-country mass flying to its credit, Hamilton Field's crack Seventh Bombardment Group returned from maneuvers in Florida. The Provisional Group, comprising 29 Bombing planes, took off on December 1st from Riverside, Calif., for Vero Beach, Fla. Flying in formation, the fleet of ships arrived at its destination 21½ hours later. Three stopovers were made during that time to allow for refueling, and the actual flying for the record-breaking flight of 2500 miles was but 15½ hours. This is the most outstanding mass flight since the flight to Alaska, and proves the ability of aircraft to concentrate on either the Atlantic or Pacific coasts within less than 24 hours. The flight was in command of Lieut.-Colonel Clarence L. Tinker, Commanding Officer of Hamilton Field.

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NEW GREASE RACK AT POPE FIELD

Air Corps troops at Pope Field, Fort Bragg, N.C., recently completed a concrete grease rack, 80 feet long, for the maintenance of the 23 motor vehicles in the Air Corps consolidated motor pool.

This grease rack is reinforced with 32 heavy railroad rails which were "chiseled" from a local railroad. In addition, many odds and ends of reinforcing steel, abandoned by the Constructing Quartermaster, went into this rack. So sturdy is the resulting structure that a conservative calculation gives it a safety factor of 21 to 1 when loaded with the heaviest vehicle, a 10-ton balloon winch. The grease rack was built just east of new hangar No. 4, and is thereby sheltered in winter from the prevalent cold northwest winds. Air lines and water lines from the hangar were tapped to provide these facilities for the grease rack. The minimum pressure in the air lines is 100 pounds at all times. By using booster grease guns, the grease pressure delivered to fittings on the motor vehicle is 4,000 pounds to the square inch. As a result of the construction of this facility, the increase in the morale of the men in the transportation department has been tremendous. The only difficulty now is that this department is prone to exceed its allotment of grease.

Pope Field is now a beautiful area equipped with nearly all that could be desired. There are nine sets of officers quarters, twelve sets of N.C.O's quarters, an excellent barracks, a modern dispensary, five good hangars (two new automatically steam heated ones, with Fenestra doors), an airship hangar and two level, dry, sodded flying fields. "Grateful as we are to a generous government for all these conveniences," adds the News Letter Correspondent, "yet we prize the grease rack as much as any of them, because it was built with our own hands without cost to the government for labor, and with very little cost for material."

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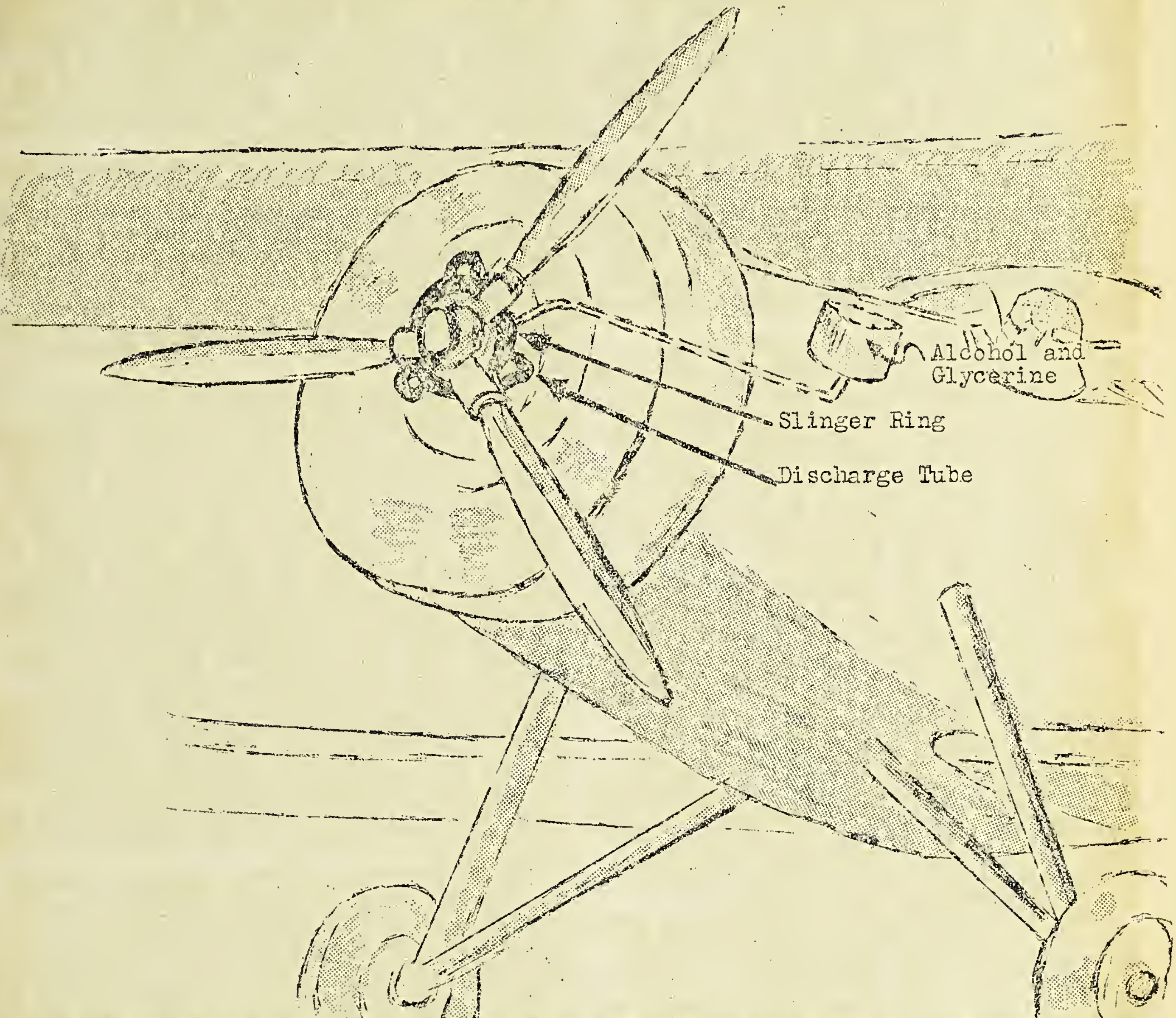
AIRPLANES VISITING SCOTT FIELD

For the year 1935, the average daily number of visiting planes at Scott Field was seven, the actual number for theyear being 2,448. Each plane took on an average of 87 gallons of gasoline and eight quarts of oil.

THE DEPARTMENT OF COMMERCE SLINGER RING DE-ICER FOR PROPELLERS

Developed by I. R. Metcalf



A mixture of alcohol and glycerine from a 3-gallon tank drips into the rotating slinger ring, and is thence fed to the absorbent pads at the blade roots. It moistens the blade surface and prevents adhesion of ice.

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Recently the pilots and crew of a Douglas Transport from the U.S. Naval Air Station at Anacostia, D.C., experienced an exciting time with ice formation while en route to Buffalo, N.Y. This little affair, a Navy press release states, combined all the happy qualities of a rock fight and a blind landing at night. Large formations of ice formed on each propeller hub, and as they increased large pieces of ice would break loose and crash against the side of the ship. Naturally, vibration was experienced, and it is an unpleasant feeling. In the carburetor scoops a quarter inch of white ice would form, then diminish and build up again. The leading edges of the wings and the tail group were perceptibly coated, although control was at all times excellent. As for the radio aerial, it looked somewhat like a broom stick.

The above item furnishes a striking example of the tendency of ice to form on propeller hubs and, in connection therewith, it is interesting to note that a device for eliminating propeller ice developed by the Bureau of Air Commerce, Department of Commerce, in cooperation with the aeronautical industry, promises to be "just what the doctor ordered."

A recent issue of the Air Commerce Bulletin, published by the Bureau of Air Commerce, gives a description of the device, as very roughly sketched above, as follows:

"What is believed to be a major advance in the campaign against one of aviation's greatest enemies-ice formations on aircraft propellers- has been made by the Bureau of Air Commerce in cooperation with the aeronautics industry, through the development of a simple device known as a 'slinger ring' which provides for continuous feeding of an anti-ice solution to the propeller blades while the aircraft is in flight.

The 'slinger ring' which measures about 12 inches in diameter, is 2 inches wide, weighs 2 pounds, and is attached to the back of a propeller at the hub, is now installed for practical service trials under actual ice conditions found in flight.

In July of this year (1935) the Bureau assigned the problem of de-icing aircraft propellers to one of its engineers, I.R. Metcalf, who prepared a program calling for a number of scientific studies on this subject. Among the subjects suggested by Mr. Metcalf was the construction of a 'slinger ring intended for continuous feeding of de-icing solution to propellers both on test stand and in flight.'

The program was submitted to competitive bidding, and the B.F.Goodrich Co., Akron, Ohio, was awarded the contract. This firm operates a refrigerated wind tunnel in which ice conditions as experienced in actual flight are reproduced. An arrangement was entered into with Transcontinental & Western Air, Inc., for the use of two 3-blade propellers, 2 engines, a test stand and 10 hours of flying under actual ice conditions. TWA has advised the Bureau of Air Commerce that it has placed an order for 60 slingers, 2 for each of its 30 twin-engined passenger air liners.

From the ring three tubes extend down the propeller along the leading edges of the blades and from these tubes the anti-ice solution is fed to the bare metal by the pilot, who can control the flow from the cockpit. In the refrigerated wind tunnel, ordinary alcohol was employed both to break up ice that had formed and to prevent the formation of additional ice. The device is so constructed as to provide for the continuous application of alcohol or any other de-icing solution to the blades for 5 hours of continuous flying, if necessary. Otherwise, the de-icing solution may be released by the pilot only for periods sufficient to break up the ice as it begins to form on the blades.

The development is available to the owners and operators of all United States aircraft as a contribution to the further safety of all who fly. The device needs to be constructed to fit a particular propeller, but this is in no way a difficult task."

ARMY AIR CORPS MID-WINTER TEST FLIGHTS

From the 1st to the 15th of February of this year, Major-General Frank M. Andrews, Commander of the Army's GHQ Air Force, will conduct a service test of various items of aircraft equipment under conditions of severe cold weather. While this test is under way there will be an opportunity to observe the efficiency of men working under very trying conditions.

The conception of this test occurred to General Andrews at the conclusion of the recent Air Force concentration in Florida, and at the time he decided to conduct another maneuver of less magnitude but designed to ascertain the effectiveness of Air Corps personnel under the severest northeastern winter conditions and using available standard and special winter equipment.

With this thought in mind, General Andrews and his staff, in their Flying Headquarters, a modified Douglas Transport, made an aerial reconnaissance of the New York-New England area with a view to selecting airdromes that would fulfill the climatic conditions of the test and yet be suitably located from a tactical point of view. As a result of this aerial tour, Burlington Airport at Burlington, Vermont; Concord Airport at Concord, New Hampshire; and the Army Air Base at Mitchel Field, Garden City, Long Island, New York, were chosen. Mitchel Field, because of its established position in the Air Corps system of maintenance and supply, was selected as the supply base for all units engaging in the maneuver. Initial requirements of special equipment and supplies have been concentrated at Mitchel Field and are available for issue by the Composite Group Commander.

The maneuver has three phases. During the first, from February 1st to 3rd, Bombardment aviation based at concord, N.H., will simulate attack of the aviation facilities at Mitchel Field, N.Y. Mitchel Field will be defended by Pursuit and Attack aviation based at the Army field. The second phase will begin about February 4th and last until about February 7th. In this phase the Mitchel Field Base, defended by Pursuit aviation, will be attacked by both Bombardment and Attack aviation based at Concord, N.H. In the third phase, from about February 8th to 15th, the scene shifts from Mitchel Field to Burlington, Vt. Burlington, defended by Pursuit aviation based there, will be attacked by Bombardment and Attack aviation based at Concord.

The tactics of the maneuver are to be secondary to the test of the equipment. The tactical situations merely give the men something toward which to direct their efforts and bring into play all of the equipment under test. The airplanes will be normally out in the open without the facilities and protection of heated hangars.

(Continued on page 24).

MILITARY AVIATION

By Lieut.-Colonel B.Q. Jones, Air Corps

AN intelligent understanding of military aviation can only be obtained by an appreciation of the individual capabilities and limitations of the different classes, and of the requirements for those several classes as members of the military team.

All military men are familiar with the four general classes and their missions, i.e., Observation, Attack, Bombardment and Pursuit. But the questions can well be asked in all propriety:"How familiar are we with the military considerations that give to each class its distinctive performances?" and "Do we know the nature of those distinctive performances?"

This paper, therefore, deals not at all with war or peace organization, or with who shall be responsible for what in the grand scheme of affairs. It deals pointedly with what the military airplane is and what part it can play in war. It deals also with the development and need for the four classes of airplanes, and with the influence upon airplane performances of the military characteristics that are emphasized in one class and sacrificed in another. It also covers briefly the armament and equipment of military airplanes, personnel limitations, a basis for understanding the requirements for, as well as an indication of the present trend of development of military aviation.

All forms of transportation embody performances dealing with load, range, speed, maneuverability, structural strength and horsepower. A vehicle that features any one of them suffers correspondingly in the others. Conversely, any vehicle designed to sacrifice all but one characteristic performance, will excell all others in its particular field.

Unfortunately, new lines of development do not always recognize this principle. We may insist upon field artillery that outranges the enemy's and then complain if it has lost mobility. Attack planes are expected to be maneuverable enough to follow the contours of the ground, yet bombardment ranges, speeds and combat loads are imposed that ruin their maneuverability. A high degree of maneuverability may be necessary for Pursuit planes, yet a heavy load of fuel will be insisted upon for long cross-country flights that puts maneuverability into the discard. What is the result? Hybrid equipment! If we would be reasonable, our procuring services can provide equipment that would excel in their respective specialized fields. However, it may require war to make us "reasonable minded."

The military and performance characteristics of airplanes have their counterparts in other weapons. For combat loads, think of projectile weights. The thought of a caliber .30 bullet is associated with a light weapon that troops carry everywhere for use against a great variety of light targets. The thought of the 16-inch shell carries with it immobility, great size and cost, but great destructive power against appropriate targets. For range, think of artillery ranges. The greater the range the greater the propelling charge, and the heavier and less mobile the weapon.

For speed, think of time of flight of the projectile. The greater the velocity, the greater must be the power, hence, weight of the propelling charge, the more stable must be the projectile, and the heavier the weapon.

For maneuverability, think of mobility of weapons. Mobility carries with it the thought of light weights, and of ease of movement in all directions on and off the roads and over all kinds of terrain. The heavier the gun, the less the mobility. The heavier the airplane, the less its maneuverability.

For structural strength, think of a gun failure. If subjected to powder charges, or operating conditions for which it is not designed, the gun will break down.

For horsepower, think of powder charges. As weapons increase in power, their weights go up, and with them the horsepower and size of the tractors and trucks required to move them.

DEVELOPMENT of the four classes of military aviation from military usage.

Observation

From the beginning of time intelligent commanders have striven to learn what their opponents were doing and at the same time to prevent their opponents from learning what they were doing. What was first attempted by the early balloons was finally accomplished by the Observation plane. Counter measures against it are Pursuit airplanes and antiaircraft fire.

Were it not for the fear of these airplanes, short range observation, i.e., division and corps, would need only communication and photographic equipment and the ability to get in and out of small fields close to the units they are serving. Fear of Pursuit has increased the combat load of Observation airplanes by the weight of their defensive armament. If the air observer is to be entirely relieved of the task of defense, the combat load must be further increased by the weight of a gunner charged solely with that responsibility. Modern speed and range requirements add still more to the weights, correspondingly increasing the size and decreasing the maneuverability as well as the ability to get in and out of small fields.

The long range reconnaissance operations of Observation aviation emphasizes range and speed, as well as heavier communications and photographic equipment. Security emphasizes high altitude flying. Emphasis upon extreme range, or upon sub-stratosphere flying, imposes characteristics so special in their nature as to require the development of types of Observation airplanes especially designed for those purposes. If over-water observation is emphasized, then operating conditions and considerations of safety of personnel require design features that will enable the plane to land and take off from the water. Such features add to the weight of the airplane with corresponding sacrifices in performance.

Attack

Prior to the advent of the airplane, the dispositions and movements of troops and supplies in rear areas, or in areas removed from immediate contact with the enemy, had only to be secure against terrestrial observation and raids. Their concentrations in small areas and in defiles offered opportunities to inflict severe losses if they could be reached with effective fire. The airplane provided a means for reaching them. Concentrations of personnel and light material are profitable targets for machine gun fire, small bombs and chemical gases. Grazing machine gun fire and surface exploding fragmentation bombs are most effective. The most accurate bombing and machine gun firing are accomplished by flying as low as possible over the targets. Bombs dropped from these low altitudes do not penetrate below the surface. Chemicals must be released at low altitudes. Low flying planes are more difficult to detect and fire on. Personnel has to be surprised or they will disperse and be prepared to deliver counter fires. If dispersed and prepared to receive the attacking planes, they cease being profitable targets. Thus, a specialized class of airplanes, known as "Attack," has been developed that emphasizes surprise by flying low over varied country, with a large machine gun armament, a medium bomb or chemical load, with maneuverability sufficient for contour chasing, and with the greatest speed consistent with its load and maneuverability. To offset its vulnerability to Pursuit airplanes, its military load is increased by a rear gunner with machine guns.

Bombardment.

The range and carrying capacity of the airplane has made possible attacks against targets beyond artillery range or deep into enemy territory. The greater the bomb carrying capacity of the plane the greater the variety of targets that can be effectively attacked. The greater the range of the Bomber, the greater the number of targets within range, and the greater the ability to approach the targets from surprise directions. The greater the speed of the Bomber, the greater the surprise; and the greater its security against pursuit and antiaircraft fire, the less strain on its operating crews and the greater the number of attacks that can be launched in a given period of time. Need for particular emphasis upon bomb loads, range and speed have developed a distinctly specialized type for bombing operations. The most accurate bombing is obtained at extremely low altitudes, but demolition bombs cannot be dropped from low altitudes due to lack of penetration and danger to the planes themselves. Delay action demolition bombs that penetrate the targets effect greatest destruction. It is impractical to provide parachutes for large bombs, and without them they bounce and ricochet away from the targets. Bombs without parachutes dropped from tree-top altitudes will neither penetrate nor "stay-put."

Bombers are too large and heavy to be maneuverable enough to fly at extremely low altitudes over hill and dale. Low altitude flying over long distances is fatiguing. Avigation over long distances is more difficult at hedge-hopping altitudes, Pursuit interception is easier, and Bombers would be within range of all calibers of small arms, and be vulnerable to bomb fragments of bombs dropped from Pursuit planes overhead that explode on contact with the ground under the Bombing planes. Hence, the Bombers seek altitude to secure bomb penetrations, for security, and for a measure of surprise. For security against Pursuit attack, gunners and defensive armament are included in the combat load. For long range avigation, avigators and special avigation equipment have also been included. Hence, bombing operations require planes that emphasize large military loads, great ranges, high speeds and operations at altitudes.

Super-bombardment airplanes emphasize military load, range and speed. Range enables it to reach very distant targets, speed decreases the strain on its operating personnel and increases its security, while capacity for large combat loads makes it a weapon of great striking power. As a weapon of war, its trend is to deny security to profitable bombardment targets anywhere within enemy territory. It is developing into a class of combat aviation whose very size and power is isolating it from economical employment with other arms.

Pursuit.

New forms of attack develop new forms of defense. As Observation aviation developed, so did its counter-arm, Pursuit, which is also a counter-measure against hostile Pursuit, Attack and Bombardment.

Pursuit employment required it to have combat initiative over all contemporary types within its range of operation. To possess this initiative required specialization in speed, maneuverability, rate of climb and high diving speeds. Combat load and range had to be sacrificed to obtain them. For employment against classes other than Pursuit, speed is emphasized; for high altitude operations, speed and climb at high altitudes are emphasized; for low altitude operations speed at low altitudes is emphasized. The sacrifice that Pursuit makes in combat load and range enables it to out-perform other classes of combat aviation within its range of action. However, when employed against enemy Pursuit, different degrees of emphasis are placed upon speed, maneuverability and altitude performances. Superiority in speed gives the initiative to accept, but not always to break off combat against contemporary Pursuit models having superior maneuverability. Superiority in maneuverability gives decided advantage over contemporary models once combat is closed, but is a disadvantage in retreat. Pursuitplanes designed for best performances at 15,000 feet altitude possess decided combat superiority at that altitude over contemporary Pursuit models designed for best performances at 5,000 feet. The converse is also true.

Transports.

Transport planes are a post-war development. The performances of transport planes for the movement of personnel and cargo should be judged on a transportation basis, i.e., daily passenger mile and freight ton mile basis. They involve considerations of pay load, speed and range that are most efficient for the character of service to be rendered. The problem of defensive armament will arise as soon as Transport planes begin to operate within range of hostile Pursuit.

Summary.

To sum up, Attack should emphasize maneuverability and armament; Bombardment should emphasize bomb load, range and speed; Observation, general utility; Pursuit, speed and maneuverability; and Transports, pay load and range.

MILITARY CHARACTERISTICS; influence upon performance.

The military airplane must be prepared for air combat and antiaircraft fire every time it flies a combat mission. Acute competition between nations occasions high pressure research, development and specialization to maintain superiority in airplane performance and power. It is this competition that makes standardization difficult. Continuous progress in airplane design and engine horsepowers brings out new models with improved performances. A model that it a satisfactory standard today will not be satisfactory two years from today.

Speed is undoubtedly the one performance characteristic most commonly employed to portray the relative powers of classes and models of military airplanes. Speed is but one of several military characteristics. All military characteristics must be considered when comparing either the performances, or the military values of the different classes, or different models of airplanes. Published performance characteristics of airplanes, and of most mechanical vehicles, are essentially theoretical. All published performance characteristics, including speed, are based upon carefully calculated performance tests. All observations are carefully calibrated and reduced to standard atmospheric conditions for purposes of comparison. The performances of all technical equipment in service, particularly under field conditions, cannot be expected to equal those attained under the mechanical care and engineering supervision necessary to engineering practices. Consequently, the engineers and procuring agencies of all nations are criticized by their pilots for exaggerating the performances of the airplanes supplied to units. Both parties are correct, but each is thinking of different conditions under which the equipment performed. Conditions of weather, poor pilotage, equipment errors, faulty mechanical condition, poor maintenance, ignorance of operating personnel, all are factors conducive to reduced performance.

The maximum official speeds are those attained under carefully calibrated conditions for those altitudes at which the airplane is intended to deliver its maximum performance. At no other altitude will the speeds be the same. The altitudes will vary from sea level to six, ten, or 15,000 feet and sometimes higher altitudes. The altitudes employed are the best estimates of the average altitudes at which the planes will operate under service conditions. Such altitudes are known as the operating altitudes. By super-charging and by propeller and airplane design, the plane's performances are made to be best at the altitudes selected. By these means, plus the fact that air resistances decrease at higher altitudes, sub-stratosphere planes can attain higher speeds than are possible at lower altitudes. In spite of the difficulties and handicaps of the use of oxygen, the added security of high speeds and high altitude operations considerably improve the combat power of high altitude planes.

Airplanes are not flown at their maximum speeds except in emergency or in combat. Formations of airplanes cannot be flown at maximum speeds without scattering the formations and destroying tactical unity. The only combat airplanes which are designed and expected to attain super-speeds in dives are the Pursuit types. None of the other types have the structural strength to withstand such speeds.

Cruising speed is employed when a plane's maximum range is being emphasized. It is that speed at which maximum range is obtained from the airplane's fuel supply. This speed is too slow for the practical flying of individual planes. It is impossibly slow for any character of formation flying.

Operating speed is an airplane's speed at around 75% maximum horsepower. It approximates the flying speeds normal to both individual and formations of planes.

Combat speed is the speed at which the planes are actually flown over the lines and in combat. What it is varies as much as the proverbial situation. The combat speeds of formations of all classes, except Pursuit, will approximate operating speeds.

As horsepower increases, speeds increase, if the ratio of power to weight decreases. When one engine cannot furnish enough horsepower, multiple engines are resorted to. A plane with a multiplicity of engines can be designed to exceed the best speeds of a single engine plane., but no such planes have yet been built for military use.

The superior speeds and maneuverability of Pursuit, except when operating against its own class, give it the tactical initiative over an opponent and, when it has the "altitude gauge", it can take advantage of its high diving speeds to close with an opponent. To illustrate:-the operating or approximate combat speed of a formation of Bombers may be 200 miles an hour at 10,000 feet. The corresponding operating speed of contemporary Pursuit models may be 250 miles their high speed, 300 miles, and their safe diving speed, 450 miles. Hence,the difference in their combat speeds may vary from 50 to 250 miles an hour.

A combat speed seldom explained is the "dog fighting" speeds of Pursuiters, or the speeds at which Pursuit planes are flown when engaging in a typical locked dog fight wherein each pilot is striving desperately to keep the opponent from getting his gun sights on him and is also desperately trying to get his own sights on his opponent. Both are striving for the "altitude gauge". The centrifugal forces are terrific. Each is flying with wide open throttle,forcing his plane into the shortest possible turn, climbing if possible, and at the maximum speed that can be maintained in such short turns. Each pilot is "shading" the verge of "blacking out". The centrifugal forces will approach 8 times gravity; the pilot's feet cannot be raised from the cockpit floor, his head is drawn down and locked on his shoulders to keep it from snapping forward. They literally need eyes on the tops of their heads. The only way they can see each other is relatively up and back. Their planes are often on the verge of stalling, due to the shortness of the turns and to their efforts not to lose altitude. In such dog fights the speeds are low. The minimum dog fighting speed of the Pursuit plane is far below its maximum speed, and very close to its stalling speed. When, for purposes of speed, Pursuit maneuverability is sacrificed, dog fights should not be attempted. The high wing loadings will make the high speed planes squash or snap roll in tight turns, placing the pilot at a serious disadvantage in a dog fight, even to the point of not being able to regain control before it is too late. The best dog fighting plane is one that emphasizes low stalling speeds and high rates of climb at low speeds. Its low stalling speed enables it to turn inside the faster and heavier planes. Its better climb at low speeds enables it to climb above its opponent which gives it the tactical advantage.

The higher the speed, the greater must be the radius of turn to avoid excessive structural stresses and the "blacking out" of the pilot and crew. Sharp maneuvers of multiplace planes induce centrifugal forces too great for the physical powers of the crew, except the pilot, to perform their duties. The pilot has only the airplane and gun controls to operate, both of which he can do as long as he is conscious. He has nothing to lift that require physical effort. Such maneuvers by multiplace planes are only resorted to in dire emergencies when desperate measures are necessary to avoid destruction. This brings out two limitations of all biplane and multiplace fighters. Their greater size and weights place them at a disadvantage with respect to the superior speed and maneuverability of the single place Pursuit. This inferiority forces them to defensive rolls against single seaters. That is the first limitation. The second is that, as soon as a situation forces the biplace and multiplace planes to radical maneuvers to defend themselves, the centrifugal forces developed are so great as literally to glue all personnel to the bottom of their cockpits with only the fire power of the forward or pilot's guns available for combat. They are then reduced to the fire power of single seaters, but at a great disadvantage in speed and maneuverability.

Combat load is the crew, armament and equipment necessary for the airplane to perform its military mission. Large combat loads and ranges require large structures with corresponding sacrifices in speed and maneuverability. To offset losses in speed, multiple engines are resorted to which add still more to weight, size and production costs, and reduce maneuverability to a negligible quantity compared to smaller types. As super-sizes and large combat loads are developed, their methods and expense of operating preclude their economical employment in close combat support of the other arms. Like artillery, the bigger the calibers, the farther back they go and the less frequent their tactical employment.

Range is the total distance an airplane can fly on its fuel supply. It varies with the speed flown because different horsepowers at different speeds consume gasoline at different rates. One Pursuit plane with a normal combat load of 52.3 gallons of gasoline consumes 24.4 gallons an hour at cruising speeds, 36.5 gallons at operating speeds, and 84.2 gallons at maximum speeds. It has a cruising range of 380 miles, an operating range of 296 miles, and, at maximum speed, it can fly only 146 miles. One new Bomber's maximum speed at 10,000 feet altitude is said to be 250 miles an hour, its operating speed, 200 miles, while its cruising speed is 140 miles. Its formation combat speed may average 200 miles an hour. The range at operating speed is 2,000 miles, at cruising speed, 3,000 miles; but at combat speed, only 1,500 miles. A plane cannot fly to the theoretical limit of its range in practical operations. A margin of safety must be allowed for head winds, for getting lost, for difficulty in finding the target and strange airdromes, adverse weather, detours to avoid enemy air defenses, [illegible] etc. A 25% reduction is a safe margin for all types except Pursuit. Single place Pursuit planes require a 66-2/3% margin because of the amount of time Pursuit may be called upon to fly at maximum power.

Maneuverability is the facility possessed by an airplane to move rapidly around a point outside the airplane. It should not be confused with controllability which is mechanical control. A draft horse and a polo pony may be equally controllable, but not equally maneuverable.

An Observation plane, a two-seater Pursuit and a single-place Pursuit may all have the same range. But the greater combat loads of the first two require larger and heavier airplanes with corresponding sacrifices in speed and maneuverability. Hence, the single-seater will out-speed and out-maneuver them.

An Attack plane must carry a considerable combat load in armament and must possess maneuverability to fly its hedge-hopping missions successfully. Hence, it suffers in speed and must increase its size in wing area to retain necessary maneuverability. The tendency today to increase the combat load, range and speed of Attack planes is having a bad effect upon maneuverability. They are becoming light Bombers and less pure Attack.

Altitude has a very marked effect upon maneuverability. So much so, that experience has raised the question of the advisability of providing special models to excel in maneuverability at selected altitudes. This applies to Pursuit as well as to those strategic Observation planes that generally operate on long individual missions.

Maneuverability not only involves movement in the three dimensions but is concerned with acceleration, or rate of change of movement. Expressed in maneuver terms, they involve diving speeds, rates of climb and radii of turns. For short turning radii, light wing loading (that is, light weights) are the prime essentials. No Pursuiter will attempt to close with a small light plane in a dog fight. The latter would be on his tail in no time. The Pursuiter's only recourse in such combats is to exploit his greater speed and climb and attack by repeated dives. While the maximum velocities of heavy, high speed planes may be greater than those of planes that accelerate rapidly, the better maneuverability and more rapid acceleration of the one especially designed for maneuverability will enable it to close and deliver effective fire before the heavier but slower starting plane can get out of range.

The performances of military airplanes are affected by structural strength, or factors of safety. Every ounce that can be saved from structural weight increases the pay load and performances. The military requirement for large loads and high performances reduce structural strength and maneuverability of large planes. Restrictions have therefore been placed upon the flying of the several types commensurate with the reasonable, safe performance of their missions. The official Air Corps restrictions upon diving speeds of all Bombers and Transports is 20% in excess of their maximum speeds; upon Attack and Observation, 25%. The restriction placed upon Pursuit is 60%, not only for safety reasons, but due to the fact that the engines at present cannot stand the high diving speeds the Pursuit planes are capable of. While these restrictions are certain to be forgotten in the stress of combat, they nevertheless afford an idea of the relative structural strengths of the four classes of aviation and of the flying limitations they impose.

Summary.

Larger combat loads, longer ranges and higher speeds, each inflicts its individual penalty by imposing greater weights, greater horsepower, higher costs and poorer maneuverability. Combined, they inflict cumulative penalties.

The range and speed of airplanes must be viewed from their several applications, i.e., speeds and ranges at altitudes, cruising speeds and ranges, maximum horizontal speeds and combat diving speeds.

Both weight and size have to be kept down to retain maneuverability.

Horsepower must be considered in relation to weight. It is the ratio of horsepower to weight that determines performances. To secure large horsepower, multiple engine units must be resorted to. Multiple engines will improve combat loads, or ranges or speeds, or all of them, but maneuverability again suffers.

Structural strength must be viewed from an appreciation of normal safe maneuvers. By limiting maneuvers, excessive stresses are avoided, which makes lighter structures possible with corresponding improvements in performances. A modern heavy Bomber could probably attain as high, or possibly a higher diving speed than a Pursuit plane, but it would go to pieces at such speeds, whereas Pursuit planes will not.

Costs should be viewed in the light of utility. Utility means cheap operation, cheap maintenance and continuous service.

Ed. Note: A further discussion of Military Aviation by the same writer will appear in an early issue.

One of the purposes of the News Letter is to serve as an open forum for the discussion of various subjects pertaining to military aviation. It is presumed that possibly other views on the subject discussed by Col. Jones may be entertained in some quarters. The contribution of articles from Air Corps officers dealing with the particular subject under discussion, or on some other phases of military aviation, will be gladly welcomed.

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DEFENSE DEMONSTRATION IN THE NORTHWEST

By the News Letter Correspondent

The importance of adequate national defense will be presented effectively to thousands of people throughout the Northwest in a three-day combined Air Corps, Field Artillery and Infantry military defense demonstration on May 29, 30 and 31, 1936, at Felts Field, Spokane, Washington, home station of the 41st Division Aviation, Washington National Guard.

Plans for the demonstration have been started by the officers of the 41st Division Aviation, fathers of the idea; the 148th Field Artillery, Coeur d'Alene, Idaho, and the 161st Infantry regiment, Spokane.

In this demonstration it is proposed to stress military aviation, and toward this end the Regular Army Air Corps is to be called upon to provide as many Bombardment, Attack and Pursuit airplanes as possible. Civic organizations in both Spokane and Coeur d'Alene have endorsed th demonstration, which they pronounce "as the most timely public presentation that could be staged in the Northwest."

Colonel Thomas G. Aston, commander of the 161st Infantry; Colonel Elwin Powell, commander of the motorized 148th Field Artillery, and Major Robin A. Day, commander of the 41st Division Aviation, are uniting in their efforts to put under canvas on Felts Field as many troops as possible, in addition to bringing to the demonstration the Adjutants General of Washington, Idaho, Oregon, and high ranking officers at Fort Lewis and at the Headquarters of the 9th Corps Area.

Colonel Lewis Farrell, commander of the 4th Infantry regiment at Fort George Wright, Spokane, and Major Allan Johnson, Instructor, attached to the 334th Infantry Reserve, Spokane, have promised their cooperation in putting troops and officers in the demonstration.

"It will be the greatest military demonstration ever held in Spokane during my association with the military service," said Colonel Aston, "and will attract thousands of persons from all parts of the Northwest. Coeur d'Alene and Spokane people have not seen their troops under canvas in the field since before the war, because our annual encampments are always held elsewhere. In this time of international arguments and war, the people like to know that they are secure to some degree at least, and they will turn out by the thousands for such a demonstration."

Newspapers and radio have received the announcement of the demonstration with enthusiasm and have promised their support.

Works Progress Administration officials have given assurance that the improvement of Felts Field by the construction of runways will be completed reasonably early in advance of the demonstration.

The work of planning the demonstration has been started early so that the best possible program can be arranged. It is the belief of the committee that the demonstration will rival the 1927 National Air Races held on Felts Field in interest, enthusiasm, attendance and beneficial results. Over 115,000 persons witnessed the National Air Races. The coming demonstration, however, will be of a purely military nature.

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AN ACKNOWLEDGEMENT

Sincere thanks are extended to Major William J. Hanlon, Director of the Army Aeronautical Museum, Wright Field, Dayton, Ohio, for his very helpful cooperation in making possible the use of the two illustrated inserts in this issue of the News Letter, as well as the cover page. Mr. Bob Fitzgerald, the handy man in the Statistical Dept. of the Museum, is responsible for the attractive lay-out of these illustrations. The plates were made and printed in the Printing Unit of the Materiel Division.

G.H.Q. AIR FORCE

THE WORK OF THE 59th SERVICE SQUADRON IN THE FLORIDA MANEUVERS

By the Langley Field Correspondent

On November 23, 1935, the 59th Service Squadron of the GHQ Air Force embarked on a rather unusual expedition.

For something like one month previous to this, the Squadron personnel had been engaged in drawing and checking equipment and supplies and organizing for the problem on hand, which was in brief as follows:

To mess, service, supply and maintain the 1st Bombardment Wing at Vero Beach, Florida, from December 2nd to 12th, also the 3rd Attack Wing at Fort Pierce during the same period, thence to proceed to the Miami Municipal Airport, Miami, Florida, for the same purpose at that place until December 15th.

The above Wings were required to engage in communications exercises during this period. This Service Squadron had been organized into the proper sections under the table of organization, but for the purposes of this maneuver it was temporarily reorganized, as follows:

Instructions were issued to the effect that upon arrival at Vero Beach the organization would be divided into two detachments, as shown below:

COMMANDING OFFICER - Major H.H. Holland

Vero Beach

Headquarters Section
Adjutant: Captain E.R. Todd.
Operations and Engineering Officer:
Captain H.C. Downey, (Acted as Det. C.O. in absence of Major Holland).

Fort Pierce

Headquarters Section
Det. Commander: Capt. C.B. DeShields.
Adjutant: Captain J. Greer.
Operations and Engineering Officer:
Captain W. Bentley.

The Engineering Section was composed of men from Flight, Armament and Engineering Sections combined; at Vero Beach under Captain H.C. Downey and at Fort Pierce under Captain W. Bentley.

TRANSPORTATION SECTION

Vero Beach	Fort Pierce
Lt. E.R. Armstrong	*Lt. J.B. Stanley
Lt. D.R. Gibbs*	**Capt. D.D. Fisher
Captain O.L. Beal**	

* Mess Officer
** Supply Section

Medical Section (Att.)
Major Brown, M.C. (1st Wing).
Captain E. Kendricks, M.C.

Enroute to Florida, however, the following officers had charge of Sections: Captain Todd, Hqrs. Section; Captain Downey, Flight, Armament and Engineering Sections; Captain DeShields, Transportation; Captain Beal, Supply.

Total officers, 12; total enlisted men, 190, A.C., 2 M.C.

A great deal of equipment was necessary in order properly to accommodate these organizations in the field. For example, there were 87 tents, not including flies, needed at Vero Beach, and 56 tents, not including flies, needed at Fort Pierce. The proper signs, bulletin boards, shelving, mess tables and latrines were made up beforehand whenever possible.

The necessary tools were drawn and made up into kits, as follows:

5 sets of airplane mechanics tools.
1 wire working kit
1 parachute working kit, including two 40 ft. canvases for repacking purposes.
1 metal working kit.
1 welding kit with tanks, hose, regulators, etc.
1 squadron kit, containing jacks, prop wrenches, spark plug tester, high pressure booster pumps, etc.
1 kit of Technical Orders, A.C. Circulars and necessary operations and engineering forms.
1 kit of accessories, such as magnetos, carburetors, starters, generators, control hoses, etc.
1 kit of emergency airplane supplies, such as wheels, tires, tubes, spark plugs, cable, fabric, dope, pressure relief valves, gaskets, etc. Also, two energizers were carried along.

The Headquarters Section carried the necessary forms and office equipment.

The Mess Section was organized for the trip down and back into two units, which would alternate as advanced echelons during the day while the convoy was on the road, this advance echelon going ahead to make lunch at a specified place. At night and in the morning both units cooked dinner and breakfast.

The Supply Section worked day and night drawing and cataloguing supplies and finally in loading same on trucks. Everything from field ranges to office stationery was needed. Bedding rolls were supplied for all officers of the 59th Squadron as well as for officers of the 1st and 3rd Wings.

A large number of vehicles were required for this mission. There was a total of 70 on the road, as follows: two panel body trucks for Headquarters Section, 2 Plymouth passenger cars for use of General Andrews and General Pratt, nine ½-ton trucks with mess equipment, twenty-four 1½-ton trucks carrying tents, poles, etc., eleven 2½-ton trucks carrying tables, latrines, tools, signs and various other items, one 2½-ton truck with a winch and boom for salvaging wrecks, one ambulance, seventeen reconnaissance cars for personnel, one 1200-gal. refueling truck and, finally, two motorcycles. The job of organizing and convoying this transportation was really a problem.

At 7:30 a.m. on November 25th, the convoy, led by Major H.H. Holland, left Langley Field and proceeded to Fort Bragg, stopping at Rocky Mount for lunch. The lighter cars were made up into a 1st Section and the remainder into a 2nd Section, with the ambulance, wrecking truck and a party of mechanics in a reconnaissance car bringing up the rear. Captain C.B. DeShields, the Transportation Officer enroute, and Capt.Kendricks, the Medical Officer, also rode at the rear in a Plymouth.

It soon developed that the problem of convoying 70 miscellaneous vehicles for 1100 miles is a problem that requires very good organization and previous planning. Major Holland had had considerable experience at this sort of thing, and this was fortunate, since he was able to foresee some of the eventualities. Captain DeShields had his hands full looking after difficulties with repairs on the road and general handling of the convoy. The 1st Section of the lighter vehicles was held at 35 m.p.h., with considerable interval between cars. The 2nd Section proceeded at not to exceed 25 m.p.h. with good intervals.

It was 1100 miles by road to Vero Beach and another 150 to Miami Municipal Airport. On the whole, these cars and trucks and their drivers did exceptionally well. All cars, including gas truck, made the trip, although the gas truck gave some transmission trouble.

At Fort Bragg, the personnel slept in one of the hangars, which arrangement turned out fairly well. In the morning after breakfast, the trucks gassed and the convoy left about 9:00 a.m. Messing and gassing were taken care of very efficiently by the Fort Bragg personnel. Pictures of the train were taken on the way to Fort Bragg.

On the 26th the convoy made Sumter, S.C., escorted by the South Carolina Traffic Police. An advance party under Captain Downey went ahead to erect camp. Part of the men slept in the Armory at this place, by the courtesy of the South Carolina National Guard. The weather was quite cold this night, and the men in tents were somewhat uncomfortable.

Promptly at 8:00 a.m., the convoy left Sumter for Savannah, where the cars gassed and the men had lunch, whereupon it was decided to make Jacksonville, since the weather was somewhat cold for camping overnight.

At 3:00 a.m., the last truck arrived at the Armory at Jacksonville, where arrangements had been made beforehand by Lieut. Gibbs, with Lieut. Fritot of the Florida National Guard, for sheltering the men. The next day being Thanksgiving Day, the Squadron remained at Jacksonville to rest the men. The following day, the 29th, the convoy arrived at Vero Beach airport about 6:00 p.m. Captains Downey and Bentley with an advance party of men arrived beforehand and started camp erection. Considerable rearrangement by Maj. Holland was necessary, since the required facilities would not fit into the location as laid out by the City of Vero Beach. The City, however, and, in particular, Mr. Damerow, the City Engineer, gave every assistance. Power lines for lights and water lines for showers were already installed. Mr. Bud Holman, the airport manager, was very helpful.

By 12:00 noon on December 1st, the camp was completed. The whole organization, minus a few mess and transportation men and guards, left then for Fort Pierce to erect that camp. This camp was completed by 10:00 a.m. on the 2nd. It was at the Fort Pierce airport.

At this time the organization was split up into detachments, as before noted. At Vero Beach, there were seven 59th officers and 100 enlisted men. At Fort Pierce there were five 59th officers and 90 enlisted men.

The 1st Wing and 3rd Wing Headquarters arrived at 1:00 p.m., December 1st. General Arnold commanded the 1st Wing and Colonel Brant the 3rd Wing. Both officers seemed satisfied with camp arrangements in general, but certain additional facilities were installed after their arrival.

The 1st Wing had 70 officers and cadets and 88 enlisted men. The 3rd Wing had 38 officers and cadets and 58 enlisted men, making a total, with the 59th Squadron, of 458 men and officers to be cared for.

The 31st and 32nd Squadrons of the 1st Wing arrived at 9:00 a.m., December 2nd, after a brilliant flight from the West Coast. The 90th Attack Squadron of the 3rd Wing arrived at the same time.

The Engineering Section at Vero Beach made 38 mechanics available to the 1st Wing, and the Engineering Section at Fort Pierce had 31 available for the 3rd Wing.

However, out of these totals, a certain number were detailed to guard and camp utility each day, which reduced the quota on the planes to an average of 25 at each place actually working on airplanes.

The shop force, consisting of welders, sheet metal workers, fabric workers, ignition specialist, wire worker, etc., operated at Vero Beach, since there was only one set of this equipment. This arrangement worked out very well, although some time was lost in bringing parts from Fort Pierce, and the men worked long hours in order to keep up with the jobs. A considerable volume of work was required by visiting airplanes.

The 1st Wing had thirty-two B-10's and B-12's and two C-14 Transports, which later were turned over to the 59th at Vero Beach for utility purposes. The 3rd Wing (Attack) had thirty-one A-12's and two C-14 Transports. One Transport was turned over to the 59th at Fort Pierce.

The general method of operation for the combat squadrons was to run one rather long mission per day, using all airplanes excepting four in reserve in each squadron. The Service Squadron assisted in first echelon maintenance. The 1st Wing had 36 mechanics, 27 radio men and one armorer. The 59th supplied 25 to them, making a total of 61 mechanics. The 3rd Wing had 25 mechanics. This with 25 from the 59th made a total of 50.

Although it was necessary to work the men long hours with little or no time off for the 59th men, nevertheless the planes were all maintained for the ten days at Vero Beach and Fort Pierce.

This same thing applies to the mess and supply, also transportation personnel, who worked long hours. Transportation men especially were busy driving personnel from hotels and other places early in the morning and late at night. Considerable driving was required to have personnel and equipment to and from planes during missions, also much trucking was necessary to handle supplies.

During these ten days, the mess section did a splendid job of feeding the personnel, which totalled almost 470 men and officers, including visitors. They were required to give service at practically all hours, since the pilots and mechanics were returning from missions at odd times. The meals were in general almost as good as what one gets at home. The Advance Depot was located at Chapman Field. This organization, under Captain Hopkins, supplied the two Wings with airplane parts and other supplies, including rations, with promptness. They undoubtedly had a big problem and did very well with it.

On December 11th, orders were given to break camp early on the 12th, and proceed to Miami. Although this required much work in packing and loading tents and equipment, the trip was completed without incident. Captains Downey, Bentley and Lieut. Gibbs proceeded to Miami Municipal Airport in advance to erect camp and prepare messes. The convoy got in rather late and ran into a howling rain storm which made parking rather unpleasant. Trucks were parked at the Naval Air Station. The Wings had already arrived at the Airport.

On the 13th and 14th, the Wings participated in demonstrations during the All-American Air Maneuvers at Miami, and on the 15th the exercises ceased. All organizations left this date for the home stations.

The 59th, under Major Holland, left at 9:00 a.m., with Capt. DeShields as Transportation Officer and Capt. Jack Greer as assistant. Lunch was had at Vero Beach, and at 4:00 a.m., the last man was in bed at the Armory at Jacksonville. This was a long hard grind for the drivers. It is some 360 miles by road from Miami to Jacksonville. The mess personnel did their job handsomely and so did the drivers, but the men were pretty well all in by the time they had eaten and made their beds in the Armory. The next day was used to check up on transportation and rest up the men.

On December 17th the convoy left Jacksonville and proceeded to Charleston, S.C., stopping at Savannah, Ga., for lunch. Arriving at Charleston at 6:00 p.m., the organization bedded down for the night in the Old Washington Light Infantry Armory. The City of Charleston very unexpectedly gave the officers a dinner at the Fort Sumter Hotel, which was as pleasant as it was unexpected. The city officials and some Army and Navy officers, including Admiral Pender and Lieut.-Colonel Welshmer, made addresses of welcome.

On December 18th, the organization left Charleston with some regret and proceeded to Fort Bragg, N.C., stopping at Florence for lunch. At 6:00 p.m., the convoy arrived and refueled, Fort Bragg performing the usual good job of handling the personnel.

The following day the convoy proceeded to Langley Field, arriving there at 7:00 p.m., with everyone well pleased to get home after a somewhat arduous campaign in the field for 25 days.

It should be pointed out in closing that the problem presented to the 59th Service Squadron was almost twice what would normally be expected of it, since the strength of the two Wings was greater than that of one Bombardment Group.

Some of the recommendations made by the squadron commanders were as follows:

1. That personnel and equipment be reduced by eliminating tentage, and housing men in hotels.

2. That combat squadrons operate own messes.

3. That busses and trailers with emergency bunks be used instead of the present miscellaneous vehicles.

4. That the service squadron do the second and third echelon maintainance but not first.

5. Electric light lines should be available for night maintenance on airplanes.

6. Advance agents should always precede convoys to arrange for servicing and other matters.

7. That mechanics be not required to do kitchen police and guard.

8. That civilian kitchen police be used, thus releasing men for other duties.

9. That all officers keep in their possession bedding rolls for use in the field.

10. That the supply officers of organizations serviced by a service squadron be required to sign a consolidated memorandum receipt for all equipment issued to their organizations.

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COMMAND & GEN. STAFF SCHOOL ASSIGNMENTS

Special Orders of the War Department, recently issued, announced the assignment of 39 Air Corps officers as students at the Command and General Staff School, Fort Leavenworth, Kansas, for the 1936-1937 course. They are directed to proceed at the proper time to Fort Leavenworth and report to the Commandant of that school between August 17th and August 26th, 1936, for duty accordingly.

Of these 39 officers, 27 are at present on duty as students at the Air Corps Tactical School, Maxwell Field, Ala., as follows:

Majors:

Joseph H. Davidson
Harold M. McClelland
Edgar P. Sorensen
Ira C. Eaker
William E. Kepner

Captains:

Charles H. Caldwell
John K. Cannon
Lawrence J. Carr
Benjamin W. Chidlaw
Harold L. Clark
Alden R. Crawford
James T. Cumberpatch
John H. Dulligan
Homer W. Ferguson
Dale V. Gaffney
Albert F. Glenn
Harry A. Halverson
Don W. Mayhue
Ernest S. Moon
William D. Old
Augustine F. Shea
Ralph A. Snavely
Bernard J. Tooher
Nathan F. Twining
Kenneth B. Wolfe
Ford L. Fair
Carlisle I. Ferris

Other officers detailed from the Air Corps Tactical School are Lieut.-Col. Harold L. George (Captain), instructor and Chief, Air Force Operations Section, and Major Emil C. Kiel (captain), chief, Communications Section.

Major John E. Upston (Captain), Hqrs. G.H.Q. Air Force, and Major Alfred E. Waller (Captain), 35th Pursuit Squadron, Langley Field, Va.

Major Oliver P. Gothlin, Jr. (Captain) 77th Pursuit Squadron, and Captain Robert W. Douglass, Jr., 55th Pursuit Squadron, from Barksdale Field, La.

Major Westside T. Larson (Captain), 19th Bombardment Group, March Field, Calif.

Major William H. Crom, Office of the Assistant Secretary of War, Washington.

Captain Robert C. Oliver, Selfridge Field, Mich.

Captain John M. Weikert, A.C. Primary Flying School, Randolph Field, Texas.

Captain Lyman P. Whitten, A.C. Materiel Division, Wright Field, Ohio.

Captain Robert B. Williams, 30th Bombardment Squadron, March Field, Calif.

Officers holding temporary increased rank are relieved therefrom effective at the time of compliance with their orders.

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ADVANCED STUDENTS NEARING END OF TRAINING

The present class of students at the Air Corps Advanced Flying School, Kelly Field, Texas, is nearing the end of its training. Ground School has been completed with the exception of a lecture on the GHQ Air Force by Brigadier-General Brant, and practical instruction and demonstration in squadron administration and duties of junior officers therein.

Flying training is progressing satisfactorily, and with the recent excellent weather the sections are slightly ahead of their schedule. Student cross-country maintenance flights are now being made in accordance with the schedule listed below:

The Bombardment flight departed from Kelly Field January 20th for Fort Sill, Okla., and Fort Bliss, Texas, with several intermediate stops. The Pursuit Section will depart on January 27th; the Attack Section, February 3rd, and the Observation Section, February 4th. Each section will follow the same general itinerary, remaining overnight in the same places. Their intermediate stops and routes, however, will be different. With continued good weather, it is believed that graduation exercises for the present class can be held between February 15th and 22nd.

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COLD WEATHER SHOOTING BY THE 37TH ATTACK

The first pistol (.45) marksmanship meet of the 37th Attack Squadron, GHQ Air Force, Langley Field, Va., was held recently in freezing weather. Although the participants were handicapped by cold and stiff fingers, over 70 percent qualified. There were 14 Experts, 13 Sharpshooters and 19 Marksmen. Lieut. Qualm held high score with 95%.

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COMMENDATION FROM THE NATIONAL GEOGRAPHIC SOCIETY

Under date of December 20, 1935, Dr. Gilbert Grosvenor, President of the National Geographic Society, addressed the following letter to General Westover:

"The Board of Trustees and the Officers of the National Geographic Society desire to express to you a full appreciation of the association and support you have rendered the National Geographic-Army Air Corps Stratosphere Expedition, culminating in the flight of November 11, 1935, at which time the Expedition's balloon, EXPLORER II, rose to an officially recognized world record height of 72,395 feet.

The scientific program of the Expedition, ambitious and pioneering in scope, was completed in a manner most gratifying to us, and, although months will be required to finally reduce the observations and recordings into factual data, the preliminary studies of the records assure us that the plans and hopes of the scientific group will be wholly fulfilled and that much data of interest and great value to science will result therefrom.

As War Department representative to the project, as a member of the Advisory Committee, and as Acting Chief of the Air Corps, you have sontributed much of your time, energy and ability which is directly reflected in the ultimate complete success and the magnificent achievements of the Expedition. Your presentation to the War Department of the Expedition's problems and the subsequent official approval bespeaks of your able and enthusiastic support. The selection of the flight personnel and the detailing of airplane pilots, mechanics and balloon-riggers is a tribute to your judgment, and the issuance of official orders for men and the materiel is indicative of the highly efficient business organization under your direction. Despite several major disappointments, your confidence in the personnel and in the project continued steadfast. Your unswerving support was a material factor in the eventual success.

For your important part in the extraordinary accomplishments, achieved in rich proportion despite many discouragements, the National Geographic Society sends you this letter of sincere appreciation, and our best wishes for a Happy New Year."

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CITATIONS FOR STRATOSPHERE GROUND CREW

Eight enlisted men, stationed at Scott Field, Belleville, Ill., received citations for their work in South Dakota with the Third National Geographic Society-Army Air Corps Stratosphere Expedition. The cited men are: Master Sergeant Joseph H. Bishop, Sergeant Glenn W. Money, Corporals George Mihaichak, Joseph Van Agtmael, Private, 1st Class, Louis D. Laurin, of the 9th Airship Squadron; Master Sergeant William J. Bennett, of the 21st Airship Group Headquarters; Staff Sergeant Oluf T. Jensen and Private Franklin E. Hunt of the Station Complement.

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FLYING ACTIVITIES AT THE BOSTON AIRPORT

The officers at the Boston Airport, Regular Army and Reserve, also one enlisted pilot, have taken advantage of the wonderful weather prevailing in that section of the country for the last six months to put in 2,253 hours of flying time, of which 1,086 hours were flown by Regular Army officers and 1,167 hours by the Reserves. Of the total amount of flying time, 479 hours were PT time, and 93 hours were under the hood,

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Captain Lewis R.P. Reese, Air Corps, was placed on the retired list Jan. 31,1936, for disability incident to the service.

GHQ STAFF OFFICERS VISIT BOSTON AIRPORT

Due to the coming winter maneuvers in New England, there has been an increase in the number of visitors at the Boston Airport. Notable among recent visitors were General Andrews and his staff in his "flying office"- the Douglas XC-32. Captain Joseph C. A. Denniston and Lieut. Charles B. Dougher, of Mitchel Field, stopped at the Airport on the return trip from Concord, N.H., after completing arrangements there for the housing of men and equipment during the aforementioned maneuvers. Captain D.P. Laubach and Staff Sergeant Lapsley, of Mitchel Field, stopped over for a few minutes enroute from Concord, N.H. On January 9th, Major Wooten, Colonel Cooper and Captain Denniston, in an OA-4A, arrived at the Airport on their way to Burlington, Vt., and Concord, N.H., to look over the ground for the maneuvers. At the same time, Captain Paul M. Jacobs, stationed at Selfridge Field, arrived from Mitchel Field.

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Lieut.-Colonel Arnold N. Krogstad, Air Corps, who is nearing the completion of four years of duty as Chief of the Personnel Division, Office of the Chief of the Air Corps, is assigned to duty with the GHQ Air Force, Langley Field, Va., effective April 27,1936.

Captain Pardoe Martin, now attending the Army Industrial College, goes to the Materiel Division next June. He was on duty in the Personnel Division for three years prior to his present assignment as student officer.

The Observation Airplane of the Future

(Continued from page 12)

graphs, handle the radio, observe information sought on the mission, serve as emergency pilot and defend the aircraft in case of attack.

While opinions differed, it was generally believed that Observation aviation has no use for bombs and should carry only sufficient armament in case of attack.

Observation aviation, as viewed by the 41st Division Aviation, has the specific duty of gathering desired information and returning it to the proper headquarters as rapidly as possible. To carry out this purpose, fast airplanes are deemed necessary, as well as airplanes built so as to permit the highest possible degree of efficiency on the part of the personnel. What the next Observation airplane will be like is a subject of considerable interest.

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Army Air Corps Mid-Winter Test Flights

(Continued from page 10)

Engine heaters, sleeping bags, skis, standard fuel and oils, electrical systems and bomb release mechanisms are among the items under service test.

Lieut.-Colonel A.H. Gilkeson, commanding 8th Pursuit Group at Langley Field, Va., will command the provisional group on these winter tests. This group is composed of the 8th Pursuit Group Headquarters, with 6 officers, 11 enlisted men and 6 airplanes; one Bombardment squadron from the 2nd Bombardment Group, Langley Field, Va., with 20 officers, 20 enlisted men, and 10 Martin Bombers; one Attack squadron from the 3rd Attack Group, Barksdale Field, La., with 20 officers, 20 enlisted men and 20 Curtiss Attack planes; one Pursuit squadron from the 20th Pursuit Group, Barksdale Field, La., with 20 officers and 20 Boeing Pursuit airplanes; one service detachment each from Selfridge Field, Mich.; Mitchel Field, N.Y., and Langley Field, Va., consisting of 9 officers, 90 enlisted men and 6 cargo airplanes.

Colonel Gilkeson has established his headquarters at Mitchel Field for the first phase of the maneuver from February 1st to and including February 3rd. He has announced the following staff assignments for the period of the maneuvers:

Major Alfred E. Waller, Personnel and Intelligence.

Major Harold H. George, Operations.

Captain Melvin B. Asp, Supply.

Captain Donald F. Fritch, Engineering.

1st Lieut. Dudley D. Hale, Communications.

All members of his staff are stationed at Langley Field, Va.

The conditions of this maneuver offer sharp contrast to the mild weather encountered in the December concentration in Florida, and this test conforms to the policy of General Andrews to make the new Air Force a highly mobile unit capable of operating under any conditions which might be encountered in the defense of the United States. Under this policy the personnel of the Air Force find they do not have time to get into the rut of garrison life, as they are constantly being confronted with new situations which take them away from their home stations in all kinds of weather.

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DISTRESSING ACCIDENT AT LUKE FIELD

The Air Corps suffered the loss of one officer and five enlisted men as a result of the aviation accident which occurred at Luke Field, Hawaii, at 7:10 p.m., January 24th, when two Bombing planes collided in mid-air. One officer and one enlisted man, 2nd Lieut. Charles E. Fisher, Air Reserve, of East Marion, N.C., and Private Thomas E. Lanigan, of Richmond, Va., escaped death by parachute leaps. Both Bombers were completely demolished.

The dead are 1st Lieut. Wm. Gordon Beard, Palo Alto, Calif.; Staff Sergeant Bernard T. Jabonsky, Williamsport, Pa.; Privates John B. Hartman, Chicago, Ill.; Truman J. Gardner, Olney, Ill.; Bruce E. Taylor, Puyallup, Wash.; and Gordon M. Parkhurst, Yorkville, N.Y.

Lieut. Beard, who was in command of the crew of one of the Bombing planes, was born in Atlanta, Ga., January 23, 1903, the son of Major Syephen R. Beard, Finance Dept., U.S. Army, at present on duty at Philadelphia, Pa. Lieut. Beard was graduated from the U.S. Military Academy in 1932, appointed a second lieutenant of Infantry, but was assigned to duty with the Air Corps. Lieut. Beard's first service was at Randolph Field, Texas, where he was a student at the Air Corps Primary Flying School. After completing the course, he went to Kelly Field, Texas, as a student in the Bombardment Section of the Advanced Flying School. He remained there until he was transferred to Luke Field, Hawaii, in April, 1934. He was promoted to 1st Lieutenant on August 1, 1935, and remained on duty at Luke Field as Adjutant and Communications Officer of the 23rd Bombardment Squadron.

The heartfelt sympathy of the Air Corps is extended to the bereaved families of these men who died in the service of their country.

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Effective January 30th, Major William O. Ryan, Air Corps, was assigned to duty as station complement commander, station complement, Bolling Field, D.C., with the temporary rank of Lieut.-Colonel.

Effective Feb. 15, 1936, Lieut.-Colonel Arthur E. Easterbrook (major), Air Corps, is relieved from duty and temporary rank as Executive Officer, A.C. Training Center, Randolph Field, and assigned to duty in the Office of the Chief of the Air Corps.

NOTES FROM AIR CORPS FIELDS

Langley Field, Va.

33rd Pursuit Squadron, GHQ Air Force. On December 20th, 1935, 1st Lieut. A.J. Hanna returned to Langley Field from his period of convalescence at Walter Reed General Hospital and on Jan. 3, 1936, was assigned to 8th Pursuit Group Headquarters. Congratulations, Arch, on the quick recovery.

The close of the year finds us at the end of our fall gunnery practice with all pilots qualified as 'Expert Aerial Gunners." Many new theories on approach and sighting were developed, as is always the case but, nevertheless, the record is there.

Recently a tournament, which is supposed by many to be the first of its kind, was staged in the skies surrounding our fair field. Teams for individual combat were selected and areas assigned to all present. The victor of one encounter would combat the victor of another, and so by process of elimination the contestants dwindled until only two remained. The final battle was fought over the sparkling water of BIG BETHEL with the defeated contestants as spectators, perched at various altitudes where each could get a proverbial birds-eye view. And who should emerge the champion but that dashing young knight of the air - with the red scarf - Cadet "Red" Elkins. Boy, can he "ground 'em!"

37th Attack Squadron, GHQ Air Force: Cadets J.W. Graham and P.P. Fender were recently attached to the squadron, the former coming from the 20th Bombardment Squadron and the latter from the 8th Attack Squadron, Barksdale, Field, La.

The 37th Squadron lost two of its pilots recently when Captain Barcus was transferred to the 35th Pursuit Squadron and Cadet Bennett to the 36th Pursuit Squadron.

Advanced Flying School, Kelly Field, Texas.

Captain Orvil A. Anderson, who has been absent from this station on duty in connection with the Army Air Corps-National Geographic Society Stratosphere Flight for almost a year, returned to his home station for duty. The entire personnel of the field congratulate Captains Anderson and Stevens on their record-breaking flight, and are pleased to have Captain Anderson with us again.

The Inter-Squadron Basketball League was recently formed at Kelly Field, being composed of the following teams: West End Team, consisting of the 40th, 42nd and 81st Squadrons; East End Team (41st, 43rd and 68th Squadrons); Center Team (Detachment, QMC, and 39th Squadron); Flying Cadet Detachment Team; and the team composed of members of the ACAFS Detachment and Photo Section, known as the ACAFS Detachment Team.

These five teams began play on January 6th, and including their last game, played January 20th, their standing is as follows:

Detachment, won 5, lost 0, Pct. 1000; Cadets, won 4, lost 1, Pct. 800; East, won 2, lost 4, Pct. 333; West and Center Teams, each won 1, lost 4, Pct. 200.

Boston Airport, East Boston, Mass.

Our C8-A airplane, which has been used almost exclusively for weather flights in conjunction with M.I.T., at Cambridge, Mass., and the Weather Bureau, will be sent to the Middletown Air Depot for overhaul. This will be somewhat of a relief to Pvt. A.V.R. Marsh, our weather pilot.

December 21st was a memorable day for the children of the officers and men of the First Corps Area, for Santa, in his snow-white whiskers and red suit, stepped out of an airplane and greeted them with a smile and a handshake. Santa and the children then proceeded to the hangar where, with his ruddy cheeks bitten by the cold north winds, and with his merry speech, he presented each and every one with an appropriate gift. After the presentation, there were refreshments for all. The success of the party was due to the untiring efforts of Capt. Walter E. Richards, Air Corps, and a committee composed of enlisted men and their wives.

We are in receipt of another PT, which Lt. Cobb flew back from Langley Field. Captain Richards flew Lieut. Cobb to Langley in an O1-E.

Private Flaherty transferred to this detachment from Mitchel Field, N.Y. - Private, 1st Class, R. Fancher, reenlisted Jan. 3d for another 3 years; Private Zeigler reenlisted here after standing the rigors of civilian life for a while, and is crewing a PT-3 again.

Lieut. Crocker Snow, Air Reserve, was on 14 days' active duty, beginning January 5th.

1st Lieut. W. Harlow, Air Reserve, was assigned as Operations Officer.

Chanute Field, Rantoul, Ill., January 14th.

Despite an unusually rainy autumn and a promise of a winter that no California meteorologist would tolerate for an instant, Operations cheerfully reports that the Training Directive has managed to keep well ahead. Our O1-E's and A-3's have averaged well over 100 hours' flying time each month, due largely to the cooperation of the night crews whose "day" begins at taps, and whose labors usually wind up when the ships are rolled back to the line at daylight. All of which - we trust - may be worthy of comment.

New arrivals during the month: Chaplain Benjamin J. Tarskey, from the Office, Chief of Chaplains, Washington; Lieut. Dick Reeves, who dropped in from Zamboanga, Indo-China and points east, accompanied by some sort of animal whose name slips your correspondent's mind, and which you wouldn't believe, even if we remembered it.

On December 10th, a flight of three ships, piloted by Colonel Junius W. Jones, Captain Albert Boyd, and Lieut. Charles W. Haas, flew to Miami, Fla. Upon their return, December 17, Colonel Jones explained to the assembled officers the various phases of the GHQ Air Force maneuvers, emphasizing certain technical problems, particularly with reference to communications, with which the Air Corps Technical School may be called upon to deal.

Selfridge Field, Mich., January 17th.

Majors Floyd M. Showalter, Kenneth E. Griffith, and 1st Lieut. Paul Hinds, Air Reserve, reported for 14 days' active duty on January 6th. Second Lieut. Joe S. Irvine, Air Reserve, reported for active duty January 15th, to be relieved about May 30th.

Snow covered terrain in the vicinity of Selfridge Field afforded an ideal condition for the old fashioned hay ride party enjoyed by the officers and ladies of the command on the evening of January 6th.

Ice skaters of Selfridge have an excellent opportunity to prove their skill on the recently completed ice skating rink on the post; on Lake St. Clair, and the canal at the southeast end of the field.

A number of enlisted men have been enjoying "shanty" fishing on Lake St. Clair northeast of the barracks, where "Shanty Town" boomed as soon as the ice was thick enough to hold automobiles and fishing shanties. Several members of the garrison have established "permanent residence" there by placing their shanties on the lake in that vicinity. An enterprising civilian maintains a store where fishing equipment may be purchased, and "Shanty Town" also boasts a restaurant. So far, only one of our officers has caught the "fever." He is none other than that inimitable fisherman, Captain Norme D. Frost. He has built himself quite a palatial cubicle, which indicates some preliminary training in the dark past along the lines of the "Specialist," but nevertheless provides a warm abode for patiently sitting over a hole in the ice with a live minnow dangling from one hand and a poised fish fork in the other.

Representatives of the Jam-Handy Motion Picture Company recently visited the post and obtained sound effects of airplanes in formation, on take-off, and landing, for use in future motion pictures, or in the movie recently filmed at Randolph Field, Texas.

Barksdale Field, Shreveport, La., Dec. 7th.

The 71st Service Squadron furnished the air base troops for the Miami maneuvers, augmented by trucks from the 60th Service Squadron and personnel from that organization and the Barksdale Field Station Complement. Two echelons of the truck train made the trip successfully, the first under command of Captain Joseph G. Hopkins, and the second under Major Roy Camblin. The first echelon will remain at Chapman Field during gunnery exercises by the tactical squadrons until approximately March 15, 1936.

All tactical units of the Third Wing Headquarters, the Third Attack Group Headquarters, the 8th, 13th and 90th Attack Squadrons, the 20th Pursuit Group Headquarters, and the 55th, 77th and 79th Pursuit Squadrons attended these maneuvers. Only a small nuclei of the Third Wing components remained at Barksdale Field, and these augmented the work of the station complement.

Note: The News Letter Correspondent submitted a cartoon depicting various styles of flight caps. This will appear in an early issue.

Scott Field, Belleville, Ill., January 16th.

Sixteen Scott Field enlisted men are attending night school in Belleville, Ill. Oddly enough, most of these students, who are taking clerical and typing courses, are high school graduates.

The Station Complement is leading the intersquadron cage championship games with three wins and no defeats. The first round was completed, and another round is about to begin.

Scott Field will have a few boxing bouts in the near future. A number of men are training at present.

San Antonio Air Depot, Duncan Field, Texas.

During December, 1935, the Engineering Department of the Depot overhauled a total of 21 airplanes and 48 engines, and repaired a total of 8 airplanes and 14 engines.

On January 2nd, the Depot dispatched civilian mechanic P.D. Smith, piloted by Staff Sergeant T.K. Dorsett, to Guadalupe Pump Station Field, near Fort Bliss, Texas, for the emergency repair of the engine in an O-25C plane, piloted by Lt. Halverson, of Crissy Field, forced down with engine trouble on an air navigation flight.

Major Morris Berman, Executive Officer of the Depot, was on 21 days' leave of absence since January 6th, visiting at Marlin, Texas.

The monthly Control Area supply and engineering conference and luncheon at this Depot was held on January 7th. Some 22 officers of the Air Corps stations in this Control Area and of the Depot were in attendance. The conference had the privilege of hearing from Captain J.M. Gillespie, Assistant Chief of the Power Plant Branch, Engineering Section, Materiel Division, Wright Field, on the subject of the latest developments in airplanes and engines. Captain Gillespie was at the Air Corps Advanced Flying School, Kelly Field, during that week, delivering a series of lectures on this subject.

March Field, Riverside, Calif.,

Filling a long felt want, 22 stalls for single enlisted men's automobiles will be available when the new hacienda type garage, now under construction, is completed early this coming summer. The garage will be located at the rear of the 19th Bombardment Group's Barracks and will replace the unsightly green temporary structures formerly located at that spot. In conformity with the Spanish colonial architecture of the rest of the post, the building will have adobe colored concrete walls with a red roof. Bachelor bombardiers welcome the change.

The garage is the only building project in the entire $231,000 Works Progress Administration program. This program, which has employed a great number of Riversiders and Angelenos during the past few months, has effected many improvements to March Field, but the garage is the only concrete structure.

Major James S. Clarke, March Field's constructing quartermaster, announced that approximately $69,000 had been expended out of the $174,000 allotted to the Constructing Quartermaster's department. Of this figure, over $40,000 was used for skilled and unskilled labor, and nearly $29,000 for materials, most of which was manufactured in injury. Sergeant Fowler's motto (very anti-Isaac Walton) is get them all now!

The 5th Composite Group Commander, Lieut.-Colonel Duncan, was restored to flying status on the 20th, after a long illness, and spent the holiday period catching up with his flying time.

23rd Bombardment Squadron: Eight new privates arrived in the organization on January 2nd, and were welcomed with open arms by the clean sleeves of the squadron, who now hope for more time on the airplanes and less on fatigue.

Private James Monroe rejoined the squadron during the holidays. He has been in Tripler General Hospital since August 24, 1935, as the result of an airplane crash during night flying.

Chanute Field, Ill., January 14.

The Station Hospital Staff is once more intact. Major Eugen G. Reinartz returned just before Christmas from detached service at Carlisle Barracks, having graduated from the Advanced Field Officers' Course.

Captain Walter F. Heine reported in a few days later from the School of Aviation Medicine at Randolph Field, from which he just graduated. During the absence of these officers, Captain Dan C. Ogle was assisted by Lieut. H.F. Chwatal, Medical Reserve, who left to resume duty with the C.C.C. at Jefferson Barracks, Mo.

Fellow employees of the Information Division of the Office of the Chief of the Air Corps gathered at the home of George Ondusko on the afternoon of January 31st to pay him their last respects. The funeral services were very impressive.

Mr. Ondusko was ill for a number of months, his condition growing worse as time went on. It was found that an operation was imperative but, unfortunately, he did not survive it.

Mr. Ondusko had been with the Air Corps since April 1, 1918, and with the Information Division ever since it was established. During his assignment in the Publication Section of that Division, he was an unusually industrious and conscientious worker, operating the multigraph, mimeograph and addressograph, maintaining the distribution list for all publications disseminated by the Information Division, and contributing largely to the efficient functioning of that section. The News Letter is one of the publications to which he contributed his efforts to send out on time.

Mr. Ondusko is survived by his widow, two young children, his mother, two brothers and two sisters.

The heartfelt sympathy of the Office of the Chief of the Air Corps is extended to his bereaved family.

THE WING NAVIGATION SCHOOL AT LUKE FIELD

'Hats off to the two instructors, Lieuts. Curtis LeMay and John Egan, and to the crew chief and mechanics," says the Luke Field Correspondent, "for their excellent work in keeping the OA-3A in flying condition. These men worked night and day, Saturday afternoons and Sundays, giving 40-hour inspections, engine changes, etc., to keep the airplane off the ground so that the school could complete its schedule on time."

The class consisted of Captains R.L. Winn, J.N. Stone, Lieuts. F.H. Griswold, W.B. Offutt and R.S. Freeman, of Wheeler Field, and Captains W.C. Sams, W.R. Warren, Lieuts. J.G. Fowler, T.M. Hetherington and J.G. Armstrong, of Luke Field.

The course was completed by the preparation of a flight from California to Manila, P.I., over the route the "China Clipper" took. Each student was assigned one leg of the flight, and was required to prepare the sun curves, stars and moon curves, Great Circle course, distance, Mercator courses, and distances for every five degrees difference in longitude for the trip.

The wind currents near and around the Hawaiian Islands prove very changeable. At times the changes are 90 to 180 degrees in a period of five minutes. This requires the navigator to be constantly on the alert for any change of wind and ground speed. In spite of this fact, very good results were obtained.

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A VERY AIR MINDED FLIGHT SURGEON

Airplanes, airplanes; morning, noon and night. But the "Doc" loves 'em. So does Mrs. John Walter, wife of Captain Walter, Flight Surgeon for the 41st Division Aviation, Felts Field, Spokane, Wash.

If there's anything "Doc" loves better than an eye, ear, nose or throat, it is an airplane. He wasn't satisfied to be just a Flight Surgeon, so he became a pilot soon after joining the Squadron.

Then, in search of a wife, his airplane instinct came to the front again, and he selected a licensed pilot for his better half. But the climax to his flying enthusiasm came recently, when Captain and Mrs. Walter selected a site on which to build their new home.

Surrounding Felts Field are many vacant pieces of property. However, only a street separated some of the lots from Felts Field. And it was on one of these lots that the Walters built their new home. The home is in a direct line with 75 percent of all take-offs and landings. At night the lights in the Walters' windows serve as a perfect beacon for departures.

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Riverside County. Of the $57,000 allotted to the post quartermaster, about $23,000 has been used for labor and material in making necessary improvements to the post.

The new post quartermaster, Major John B. Casseday, recently arrived from Fort Leavenworth, Kansas, and is in charge of expending this part of the appropriation.

A most important project has been the erection of a six-foot fence around the reservation. It consists of ordinary fencing fire with barbed wire on top. This enables the one sentry to check all persons entering the post during hours of darkness. Work is nearing completion on the road on the west side of March Field and drainage ditches. One of the most important of future projects is the concrete road to be built in front of the hangar line.

Hawaiian Air Depot, Luke Field, T.H.

With summer on the way, a large portion of the personnel are beginning to think longingly of their vacations. Many plan to go to the mainland to visit their families and friends whom they haven't seen, perhaps, for years. Leave schedule being worked out by the Engineering Section indicates that approximately 20 employees from this Depot will be touring the mainland sometime during this year.

The Dope and Fabric Shop, which was in imminent danger of collapse from the inroads made by termites, is being retrussed and strengthened throughout. The Depot Supply is doubling the storage space of one of the seaplane hangars by building a yard and shed alongside.

Mr. W.H. Beers, Jr., Lt. U.S.N., retired, recently resigned his position in the Supply Section as Purchasing and Contracting Agent to take a position in civil life.

Mr. Henry C. Clark, formerly with the Lockheed Corporation, arrived from the mainland during December to begin work in the Engineering Section of the Hawaiian Air Depot.

A bulletin has been prepared by the Engineering Section, covering in detail the living costs and conditions in Hawaii, together with all information that might be of value to personnel considering transfer to or employment by the Hawaiian Air Depot. These bulletins will be forwarded to the Personnel Office, Materiel Division, and to the Manager of the 12th Civil Service District in San Francisco.

In connection with the recent bombing expedition to Hilo, the Supply Section of the Hawaiian Air Depot is able to adjust another feather to its cap by virtue of its smooth and efficient operation under the direction of Captain C.P. Kane, who was Purchasing and Contracting, Supply and Public Relations Officer. Fifty drums of gasoline were shunted from the original destination and landed at the Hilo Airport; sand was procured for the sighting bombs and heavy flying equipment was issued. In spite of the spontaneous conception and completion of the expedition, the Supply functioned so well that the expenditure of a minor amount only of extra funds was necessary.

By reason of this recent expedition to Hilo, the need has been recognized for a permanent allotment of Air Corps gasoline to be stored at the Hilo Airport. The landing field is excellent, and housing facilities are immediately available at the Kilauea Military Camp; furthermore, the landing field at Hilo is more centrally located than any other on the Island of Hawaii.

Luke Field, T.H., January 2nd.

50th Observation Squadron: Lieut. J.M. Chappell received orders for change of station to Fort Sill, Okla., and will leave for the mainland on the February boat.

Major H.G. Peterson, now on leave on the mainland, has been ordered to report for duty at Brooks Field Texas.

The Quarterly Service Test, with full military equipment, for the second quarter, was successfully accomplished on December 20th.

With the approval of the Squadron Commander, the noncommissioned officers contributed to a fund for the purpose of buying Christmas presents for the noncommissioned officers and the members of their families. The problem arose over eligibility to play Santa Claus, both 1st Sgt. Tilton and Tech. Sgt. Williams being candidates for the job. The affair was amiably settled by appointing the Squadron Sergeant Major (Private Bach) for the post, with Sgts. Tilton and Williams as assistants. Private Bach proved to be a real actor in the portrayal of the role, and the party was brought to a successful conclusion when the members of the squadron and their families gathered around the Christmas tree and the presents distributed.

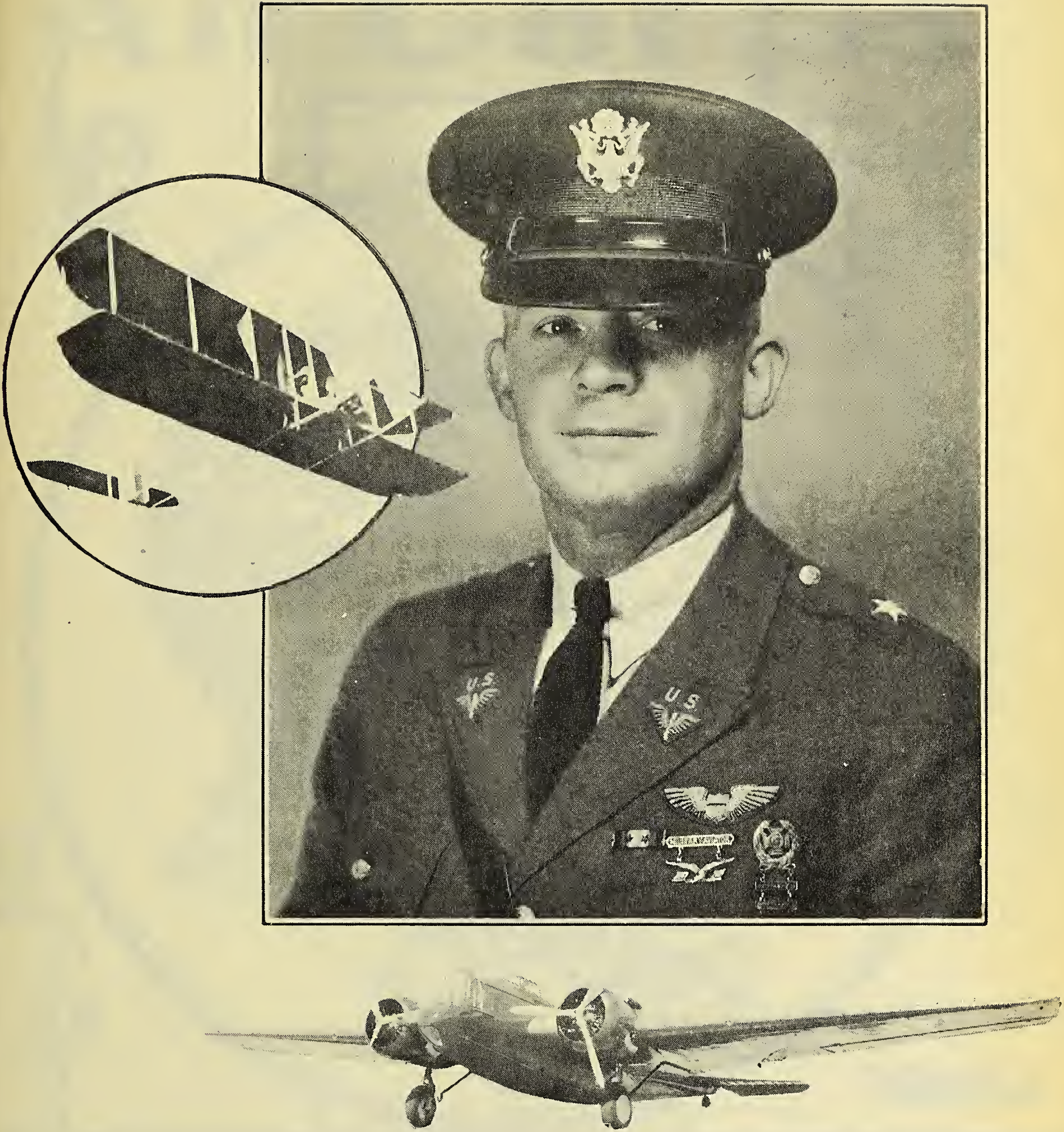
The officers and noncommissioned officers and their families were invited to the dining room, where the able Chief-of-the-Culinary Department, with his able staff of assistants, were waiting with a dinner that should have cured all thoughts of home, the mainland, etc., for a long time. To quote from Walter Winchell, "a swellegant time was had by all."

Major Beau, our present and popular squadron commander, commended the enlisted men of the squadron for their untiring efforts during the year, and extended his sincere wishes for a Merry Christmas and Happy New Year to all members of the squadron.

Lieuts. Stewart and Cochran took advantage of a privilege covered by Army Regulations and took their wives for a ride in the clouds on December 21st. We are sure they enjoyed the Hawaiian scenery over the Island of Oahu, and we wonder if the Lieutenants were bothered with back-seat driving during the duration of the ride.

Our Mess Sergeant (Chief-of-the-Culinary) and Mrs. Johnson are taking suitcase drill preparatory to embarking for change of station to Brooks Field, Texas. They will sail for the mainland on the February boat. Happy landings, Johnson, and success at your new station. You can be assured that we will miss you here.

Staff Sergeant Fowler is charting the fishing grounds in the Territory, and there is some fear that the fishing industry will suffer untold

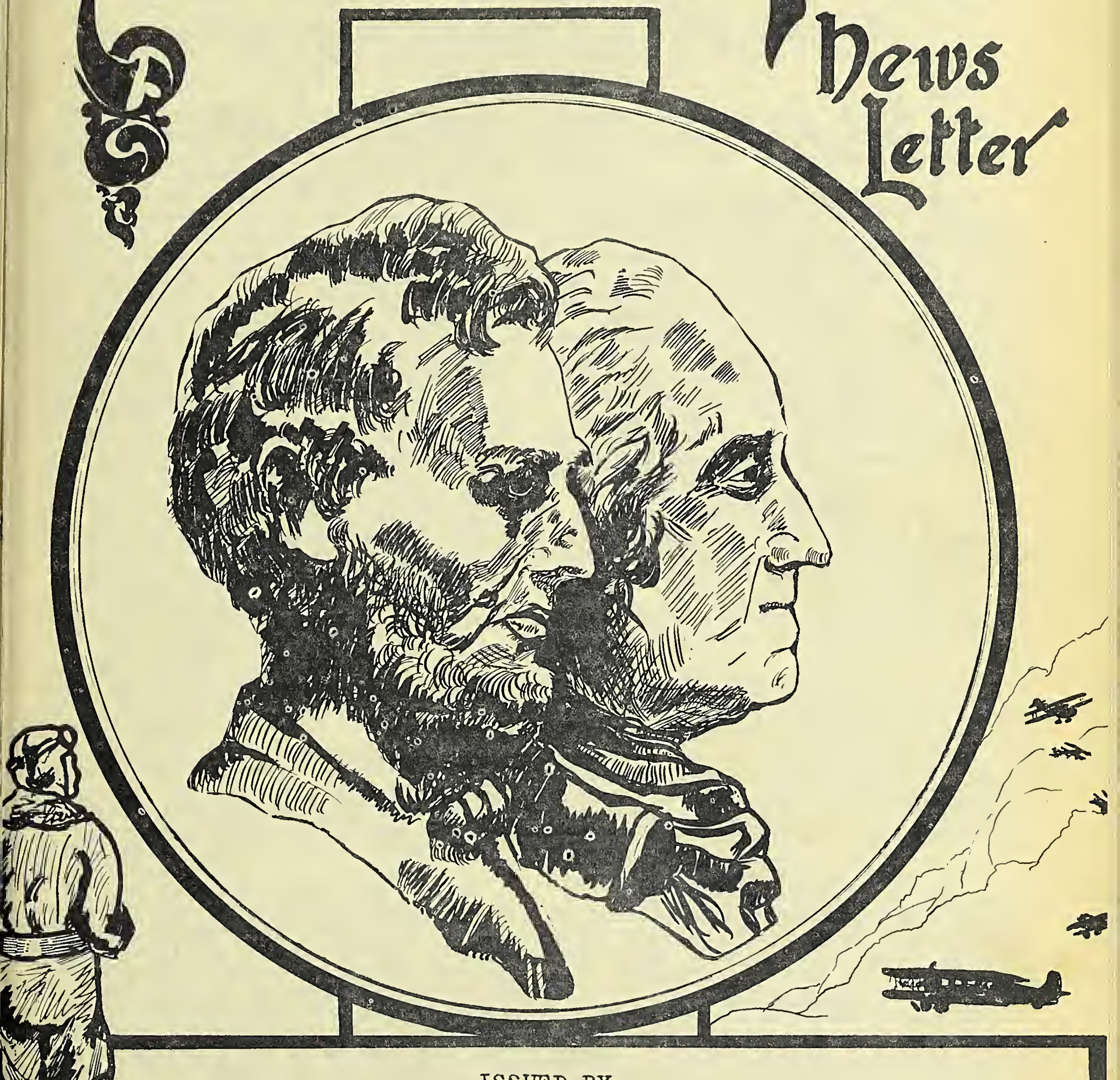


----- BRIGADIER GENERAL HENRY H. ARNOLD -----

The new Assistant to the Chief of the Air Corps.

He piloted the early Wright biplane and the modern Martin Bomber.

Air Corps News Letter



ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D. C.

SGT. Lindquist, C.N.G.

VOL. XIX FEB. 15, 1936 No 4

VOL. XIX AIR CORPS NEWS LETTER NO. 4.

Information Division
Air Corps

February 15, 1936

Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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MATERIEL DIVISION DEVELOPMENTS AND ACTIVITIES DURING 1935

By Brigadier-General A.W. Robins, Air Corps
Chief of Division

The past year was marked by greatly increased activities in the Materiel Division along all lines of administration, procurement and engineering. Replacement of personnel for the first time in several years has been possible. Increased procurement funds and the application of a new procurement policy have occupied the full capabilities of the personnel engaged in this function. And with the increased procurement and higher military requirements of aircraft, basic engineering problems have also increased. Demands for engineering research and test necessitated a more efficient grouping of engineering talent and the creation of additional testing facilities to keep pace with the advances in the design and development. The shortage of personnel, acute the past few years due to government economy programs, was partially relieved by availability of funds in May,1935.

Administration of Wright Field

The principal changes made in the functional organization of the Materiel Division during the year were:

1. The transfer of radio aids to navigation from the Air Corps to the Aircraft Radio Laboratory at Wright Field, which is under the supervision of the Signal Corps;
2. Creation of a Physiological Research Unit,under the supervision of an officer of the Medical Department, for study and investigation of the effect of flying equipment and flight upon the normal mental and physical conditions of personnel.

New construction under the Public Works Program included the Static Test and Army Aeronautical Museum buildings, and an addition to the heating plant. A new high-power radio telephone station was installed at Patterson Field to facilitate service over the Army airways.

The Army Aeronautical Museum Building was completed, furnishing adequate permanent filing space for the valuable exhibits, documents, and books of the Technical Data Branch. In the basement are the shops, engine exhibits, and some offices. On the first floor is the main Museum Hall, in which many significant exhibits are preserved for examination by interested parties. There are also the administrative offices and the Library reading room. On the second floor are the document room and quarters of the Air Corps Engineering School.

Air Corps Engineering School

This school gives a year's course in aeronautical engineering to specially selected Air Corps officers and serves as a source of commissioned engineering personnel for the Materiel Division. It is operated by a staff of four, augmented by Materiel Division engineers who serve as lecturers, using the Materiel Division laboratories as bases for their instructions. Seven officers took the 1934-35 course, as against 6 and 11 the two previous years, and four of these were assigned as replacements within the Division.

Field Service

An interesting function of this section during the year was the Depot Transport Service which, with its organizations located at five different fields, carried during the fiscal year 876 tons of freight, 402 passengers, making 661 trips and flying 411,782 miles.

For the general purpose of disseminating educational material, when same could be spared from the Air Corps uses, 831 loans and 83 transfers of property were made to schools and museums.

The Air Corps, in the fiscal year, issued to the National Guard equipment and services amounting to $467,650.15 among its 19 squadrons and 18 photographic sections.

Flying Activities

Official Performance Tests and incidental flying aggregated 13,132 flying hours for the fiscal year, 13½ percent over 1934. The average number of military airplanes on test per month was 26.

Procurement

Procurement of aircraft is influenced by the rapidity of aircraft design evolution. There has been a steady advance in materials, in aerodynamic refinement, in engine power, and propeller efficiency. A modern airplane requires 3 to 5 years for development, commencing with design and construction of an experimental article; testing of engineering, performance, and specific military requirements; service testing for the purpose of obtaining its special tactical military value; and finally procurement in quantity for use in the tactical organizations of the Air Corps.

A consideration of experience and statistics leads to the conclusion that the first airplane purchased from a completely new design has small hopes of being placed in production as received. Problems of arrangement, aerodynamics, strength, flying qualities and performance are still so complicated in their inter-relations that it is difficult to calculate exactly the effect of each on the others.

Aerodynamics and Aircraft

In the raising of specification requirements for all types of aircraft, aerodynamic improvements were mandatory. Extensive wind tunnel tests were conducted on model aircraft to obtain data on which to base performance specifications in future procurement. The coordination of calculation with flight test results was furthered, especially in connection with controllable or automatic propellers. Field equipment for photographically measuring take-off and landing was developed in this connection.

The year 1935 found the low-wing monoplane established as typical in military aircraft. The advantage of compactness, held by the biplane, is of no great importance for land operations, and the structural strength of the biplane is no longer preeminent in view of the recent developments in stressed-skin wing and fuselage construction.

The airplanes contracted for in the Fiscal Year 1935 were:

50 two-place Consolidated Aircraft Corp. PB-2A Pursuit airplanes.

110 Northrop 2-F Attack, all-metal low-wing cantilever monoplanes, with trailing edge flaps and fixed landing gear.

103 B-10B Martin Bombardment airplanes.

71 Douglas O-46A Observation planes, with trailing edge flaps

30 Seversky basic training airplanes.

In this total of 364 airplanes, no biplane appears.

During the calendar year 1935, development was particularly demonstrated in the Bombardment types. Outstanding were the Martin, Douglas and Boeing airplanes submitted on procurement competition. This latter airplane represented an interesting step in Bombardment design in both performance and arrangement. Fortunately, a large amount of engineering as well as some flight test data were obtained prior to the time it crashed on October 30th, so that the invested effort was not lost for military purposes. Recent awards of the War Department will result in contracts for 82 Douglas Bombardment and 13 Boeing Bombardment airplanes.

The autogyro was given serious military consideration, and a contract was let for one each of two types, for study and testing to determine their tactical value. The evaluation of data on airplanes and designs submitted in competition during the year absorbed a large percentage of the available time of the engineering personnel.

Considerable success was had in eliminating from aircraft structures the causes of destructive vibration. The control of conditions governing flutter and vibration has become increasingly important as the speed and size of aircraft have mounted. The search for lower speeds and steeper angles in landing is being continued through the medium of different types of flaps which have become almost universal on military airplanes as a means of improving landing and take-off characteristics.

Propellers

The propeller test rig, the largest plant of its kind in the world, continued to serve the Air Corps, the National Advisory Committee for Aeronautics and the Navy. With the improved methods used by the Air Corps for testing vibration qualities of propellers, important advances were made to keep propeller design abreast of the increasing horsepower of engines. Since it was found that practically all the Air Corps propeller failures could be attributed to vibration, a vibration study was included as part of the Army acceptance tests. A magnetic pick-up for mounting on the blade, for vibration recording in flight, is under development.

Structural Development and Research

The use of symmetrical airfoils and stable airfoils having very low and relatively constant moment coefficients was encouraged and incorporated in all new designs to reduce the possibility of flutter due to aerodynamic instability at high speeds. This use also makes possible a saving of weight due to the smaller torsional moments to be handled by the wing structure.

The static test laboratory continued its development of improved test methods. This laboratory, with its massive testing stands, its special light portable scaffolding, and its precise apparatus for measuring bending and torsional deflections, affords modern facilities for the sand loading of aircraft structures. Three complete airplanes were tested to destruction under loading conditions simulating the most severe flying and landing conditions likely to be encountered in service.

Lighter-Than-Air

The TC-13 non-rigid dirigible airship has continued in service, with additional equipment including a radio compass and an automatic directional pilot. One of the most important developments in this category is the construction of an observation balloon envelope entirely from synthetic rubber. The balloon has been made ready for test.

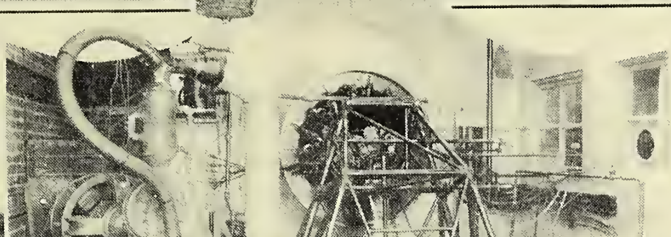
An extremely light portable airship moor-

BRIGADIER GENERAL A. W. ROBINS, AIR CORPS
CHIEF OF THE MATERIEL DIVISION

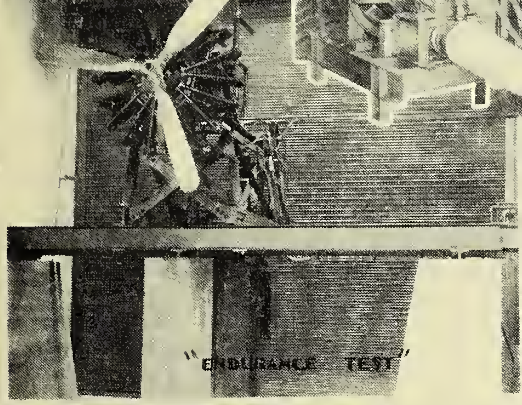
POWER PLANT LABORATORIES

AIR CORPS // MATERIEL DIVISION // WRIGHT FIELD

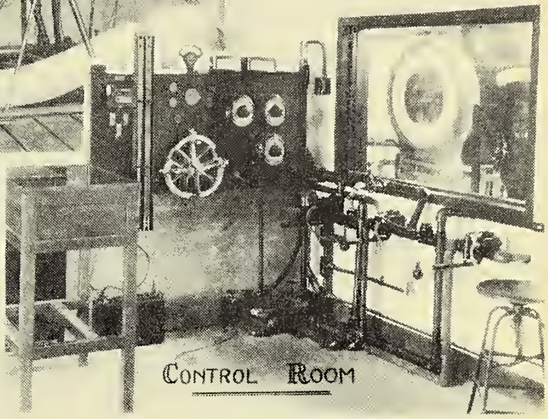
EXTERIOR
LABORATORY BLD'G.



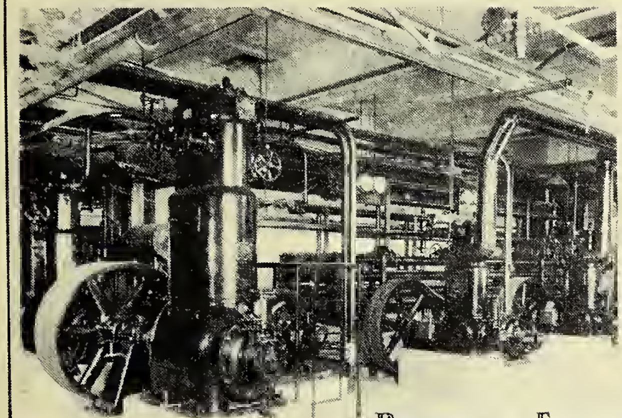
DYNAMOMETER TEST STAND.



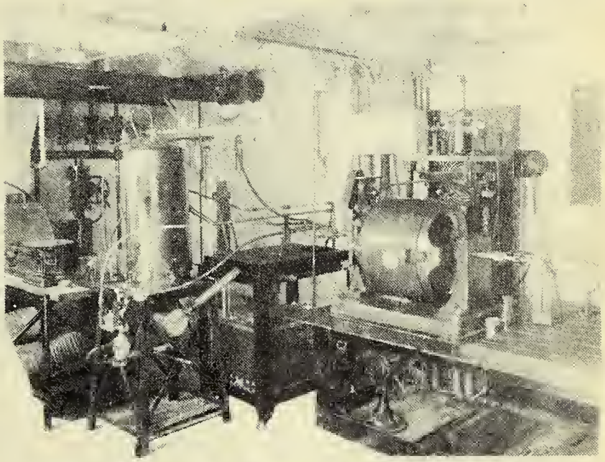
TORQUE STAND.



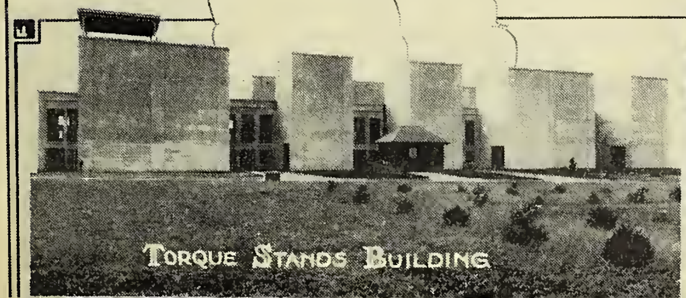
CONTROL ROOM
IN TORQUE STAND BUILDING.



REFRIGERATING EQUIPMENT
IN POWER PLANT LABORATORY BLD'G.



FUEL SYSTEM TEST, ALTITUDE COLD ROOM //



TORQUE STANDS BUILDING

WATER CONDITIONING BASIN

ing mast of a type suitable for transport by airplane was tested.

Power Plant Development

Power plant activities were devoted to the development of aircraft engines of the radial, vee, and horizontal types, principally in the 800-1000 horsepower category. Considerable attention was also given the problems of introducing new models of service engines having higher output and increased altitude ratings.

Marked progress featured the development of engine accessories, including fuel injectors and their application to engines; devices for the automatic control of carburetion (including fuel injection); magnetos; vacuum pumps for operating gyroscopic instruments and deicer equipment; accessory drives; lubricants for improving all-weather operation. New superchargers of increased size and weight, and greater flexibility were studied. Two turbo superchargers were procured for 600 to 1200 h.p. engines. Center air-intake was provided to obtain ramming effect, and arrangement was made for varying the relation between the inlet and outlet of the compressor. Fuel of 100 Octane rating was procured to the amount of 100,000 gallons for test at Hamilton Field, a specification having been prepared for this fuel. Ice-forming tendencies of various fuels available commercially were investigated.

Synthetic rubber was found satisfactory for refueling hose and fuel, oil, and water connections.

Work in aircraft armament for the year included study and development of high caliber aircraft guns utilizing explosive shells, electrically operated bomb racks and mechanically operated flexible gun mounts. Studies leading toward the electrification of all bomb control and releasing mechanisms were instituted. Reduction of gun cameras from 35 to 25-mm. size film was made a project.

Material Development

The Air Corps adopted a policy requiring the use of "Alclad" for all combat planes designed with a non-corroding metal stressed skin, to the end that painting of the surfaces may be obviated. The Alclad metal offers the advantage also of giving satisfactory results in the tide-water stations where salt corrosion is troublesome.

Study was made of a new aluminum-magnesium-chromium alloy offering resistance to tidewater corrosion, and having good welding characteristics. It has been recommended for cowling, fairing, leading edges, etc. Considerable progress was made in the laboratory on spot welding of various aluminum alloys.

The Air Corps has been cooperating with other Government bureaus on development of corrosion-resistant electrolytic surfaces for magnesium. At present the metal is used chiefly in cast form for engine parts.

The use of spot-welded stainless steel in aircraft construction, especially for aircraft operating in the vicinity of salt water holds considerable promise. This method of welding has been approved for non-stressed parts, such as cowling, brackets, and reinforcing members attached to the skin and wing surfaces.

In materials the transition from wood and fabric to metal for the structural parts of military aircraft has been pronounced during the past 15 years. All military airplanes procured in the current fiscal year were of all-metal construction in which aluminum alloys represented 80 to 85 percent of the total weight of the structure. The use of the monocoque fuselage has drastically reduced steel requirements, while the air-cooled engine with its aluminum fuel and oil lines has almost eliminated the copper base alloys.

Equipment

Progress was made in the development and revision of navigating and engine instruments, electrical equipment, aerial photography, parachutes, clothing, and miscellaneous equipment.

Pre-focussed lamps have been specified for precluding faulty focussing in service. Revolving beacons will be equipped with these lamps in the 1,000-watt, 115-volt size.

Four portable power plants have been studied, one consisting of a small engine and generator separate from the main power plant. These are for the purpose of supplying emergency power in lighter-than-air craft and amphibian airplanes.

An experimental light-weight direct-cranking electric starter has been tested, and will be installed in an airplane for 8 months' service observation.

A new accelerometer and a sensitive altimeter have been tested, the latter under conditions of slight pressure change, This instrument reads 250 feet of altitude for one complete revolution of the pointer. A new navigation calculator for mechanically solving the astronomical triangle for celestial navigation has been developed, and ten articles ordered.

Engine synchronizing devices have undergone tests. The Sperry automatic pilot tested on the YB-12A was found satisfactory and 30 additional units will be procured.

Devices for the prevention of ice formation have been given serious study, and many tests conducted. Work on this project will be continued until completely satisfactory results are obtained.

The Army Air Corps instrument flying and landing system was adopted as standard by the Bureau of Air Commerce, and sets of the equipment were ordered with the cooperation of the Materiel Division for installation in 36 commercial airports. Procurement has been initiated for installations at the Army fields.

Aerial mapping studies have continued throughout the year. A multiplex mapping machine was loaned to the Pittsburgh District Engineer Office to conduct a practical test on the mapping of the proposed Lake Erie to Ohio River Canal route.

Interesting tests were conducted, using two 5-lens mapping cameras suspended in a tandem mount, resulting in a final composite print which is octagonal in shape and gives the effect of having been produced by a 9-lens camera. Results of the practicability of this camera arrangement have not yet been determined.

Development continued in electrically heated winter clothing.

A flash steam generator was studied for heating engines mounted too high above the ground for application of ordinary engine heater.

An acceleration machine for studying the physiological effects of increased accelerations on the human body was built. It is a 20-foot fuselage, pivoted at the center for horizontal rotation, and attains acceleration 30 times the force of gravity.

One of the foremost accomplishments of the year was the successful prosecution on November 11th, by Captains A.W. Stevens and Orvil A. Anderson, of the Stratosphere Flight sponsored by the National Geographic Society and the U.S. Army Air Corps. Much of the testing of instruments and preparation work was performed at the Materiel Division. The results of the flight are too well known to need comment.

The past year was one in which the multiplicity of projects has demanded the utmost of personnel. It is believed that the advance engineering foundations laid down have been basically sound and that the Materiel Division will advance from them to further accomplishments in the year 1936.

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NEW NIGHT LIGHTING EQUIPMENT FOR SCOTT FIELD

A total of 42 boundary lights, 5 obstacle lights and 12 floodlights were installed at Scott Field, Belleville, Ill., during the past year to supplement the night lighting equipment already in use. The cost of the new equipment was $18,155. Scott Field is as well lighted for night activities as any field in the United States.

Over four miles of cable were used in connecting the 42 boundary lights encircling the approximately quarter square mile landing field. These lights are set in concrete foundations in the ground and are covered with an iron grill so that aircraft may run across them without damaging the 100 watt lights.

The 12 new floodlights are 24 inches in diameter and use 3,000 watt tubular lamps. These are arranged in three series of four floodlights each. Four floodlights are mounted on a steel frame, called a bridge assembly, and are adjusted so that their combined light covers a large area of ground.

These three series of floodlights are located in strategic positions for both airplane and airship night landings. One is located in the northwest corner of the landing field and is directed in a southeasterly direction. The other two are located at the northern corners of the airship hangar and are so directed that they cover all the ground in the northwest, north and northeast.

These new floodlights replace eight of the obsolete type.

Five new obstacle lights were mounted on objects over 60 feet in height, bringing the total number of obstacle lights to 16. The new lights were placed on the following structures: one on each of the two smokestacks of the central heating plant, one on the airship hangar heating plant smokestack, and two on the roof of the balloon hangar.

The boundary lights and the floodlights are both automatically and remotely controlled from the small, steel building located conveniently near the operations office. The floodlights are also controlled by switches in the airship hangar control room.

These new lighting features supplement the revolving beacon with split ray lens and the two 60-inch diameter searchlights which use 10,000-watt globes. The beacon is used for all aircraft, while the searchlights are used only for airships. The split ray lens sends out two beams, one following the other.

All of these features make Scott Field one of the best landing fields in the country.

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The gas plant at Scott Field, Belleville, Ill., purified over a million cubic feet of helium gas in 1935. It also manufactured a million cubic feet of hydrogen for use in meteorological balloons at Selfridge, Chanute and Scott Fields, and Fort Sheridan, Ill.

Brigadier-General H.C. Pratt, commanding the 2nd Wing, GHQ Air Force; Lieut.-Colonel Willis H. Hale, Executive, and Capt. Dwight B. Schannep, Operations Officer, flew to Selfridge Field, Mich., on February 2nd. General Pratt and his two staff members are on an inspection tour of GHQ Air Force activities.

NAVIGATION TRAINING IN THE 2ND BOMBARDMENT GROUP, GHQ AIR FORCE

Shortly after the disbanding of the Advance Navigation Training Unit at Rockwell Field, Calif., in June, 1935, the GHQ Air Force Headquarters directed that the training of officers in Navigation be continued by each Bombardment Group under the direction of Group Navigation Officers and prescribed a course of instruction with the objective of qualifying Bombardment pilots in both Dead Reckoning and Celestial Navigation.

The importance of this training was emphasized in anticipation of accurate navigation becoming increasingly essential to the efficient operation of Bombardment units as their radius of action increases with the rapid advances being made in the development of long-range Bombardment airplanes.

The course of training prescribed included 66 hours' flying time as navigator, a resulting approximately equal number of hours as pilot, and 180 hours' ground instruction. This time was sub-allotted, as follows:

Flying time as Navigator:	
Navigation missions . . .	30 hours
Interception missions . .	18 hours
Radius of Action missions	18 hours
Ground Instructions:	
Instruments, Use and Maintenance	15 hours
Maps, Projections, Sailings	25 hours
Theory of Navigation by Dead Reckoning	20 hours
Radius of Action, Interception, Search and Patrol .	30 hours
Theory of Celestial Navigation and Sextant Practice	60 hours
Meteorology	30 hours

In accordance with this directive, a Navigation Unit was organized in the Second Bombardment Group during the latter part of July, 1935, with Captain A.Y. Smith as Navigation Officer and 1st Lieut. J.A. Miller as Assistant Navigation Officer, and with two enlisted men detailed as clerk and plotter. On August 1st, four officers were detailed to comprise the first class, but a short time later two of these officers were relieved due to a shortage of airplanes equipped with navigation instruments.

The two remaining student officers, 1st Lieuts. D.H. Kennedy, from the 49th Bombardment Squadron, and W.O. Senter, from the 20th Bombardment Squadron, completed the course in December after having first put their training to test by making an over-water flight from Langley Field to Jacksonville, Fla., and return. After passing the North Carolina Capes on this flight, land was not again sighted until a few minutes before crossing the coast line south of Fernandina, Fla. (a distance of over 400 statute miles). Continuing on the same course for approximately ten minutes, the ship passed 2½ miles to the left of the Jacksonville Airport, 3¼ minutes ahead of the computed time of arrival. Similar success was attained in communicating with the U.S. Coast Guard Stations at Norfolk, Va., and Jacksonville, Fla., which were advised of the position, course and ground speed of the airplane at periodic intervals. Aside from obtaining weather reports through the above Coast Guard stations, the radio was not used as an aid to navigation, the navigation being entirely by dead reckoning, though a number of celestial observations were taken as a check on the position of the airplane.

On January 6th, the following officers were detailed to comprise a second class:

Major E.C. Black, 2nd Bombardment Group Headquarters,
Captain R.E. Nugent, 96th Bombardment Squadron,
Captain R.F. Travis, 49th Bombardment Squadron,
1st Lieut. G.E. Williams, 20th Bombardment Squadron.

It is antitipated that, as additional equipment becomes available, this class will be able to perform a considerable percentage of its training in Bombardment airplanes simulating actual operations.

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ALL IS WELL WITH THE THIRD WING!

"The Third Wing now feels that it has graduated into a full-fledged position in the GHQ Air Force," says the Barksdale Field Correspondent, and he then goes on to say: "It was a gala day for the Third Wing when the first notice was received that the Commander of the Third Wing is hereafter to be a Brigadier General. The Wing and Post personnel have spent a great deal of time congratulating themselves and each other on the fact that the Brigadier-General is none other than General Brant, whose loss as commander of the Third Wing and Barksdale Field had been rumored and greatly feared.

Owing to certain deficiencies in the English language, we must borrow from the Japanese and Hawaiian to express our real feelings in saying: 'Banzai and many, many Alohas to General Brant.'"

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Training in the Third Attack Group at Barksdale Field, La., during January stressed Aerial Gunnery, as directed in T.R. 440-40 (Revised). Enlisted gunners have been receiving training in Aerial Gunnery to include firing on the 1000" range and Skeet shooting. All the officers of this Group had their initial qualification test in Instrument Flying and all but two had the requalification test required each 6 months by GHQ Air Force.

TURNOVER MOCK-UP OF P-26A PURSUIT AIRPLANE

A cabin to make it possible for flyers to operate in the high winds induced by the speeds of modern airplanes has become a necessary part of every military model. Heretofore these cabins have been added structures built upon the fuselage rather than an integral part of the fuselage design.

In order to gain for the cabin the added strength contributed by depth of structure, it is planned to incorporate the cabin framework as an integral part of the original fuselage design. To obtain proper dimensions for such a structure, those which will best contribute to the safety and comfort of personnel of all sizes as well as to the best structural effects, a board of officers convened at Wright Field, Dayton, Ohio, on January 28th to make a study of a P-26A fuselage mock-up, with a cabin protected by a metal skid. The fuselage was underslung by a metal cradle in order to accomplish nose-overs with personnel aboard.

Again and again during the investigation, the officers of the Board, Major John F. Whitely of Langley Field, Va.; Captain Lowell H. Smith, of the Office of the Chief of the Air Corps, Washington, D.C., and Lieut. R.C. Wilson, of Wright Field, entered the cockpit to experience actual nose-overs, which were accomplished by a crane lifting the tail until the fuselage flipped over on the cradle hoops, upside down.

The present type of airplane cabin is constructed to accommodate the largest personnel, and in the case of a nose-over the smaller men had as much, sometimes as eight inches farther to fall before their heads struck the sponge rubber pads in the cabin roof. The idea is to obtain a reduced size cabin structure which will allow for less space above the average pilot's head, with the cockpit seat raised or lowered according to the aviator's height and forming the variable factor.

The Board confined its recommendations to the single-engine, low wing monoplane cabin. The Board completed its report and recommendations the first week in February.

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FIRST PURSUIT GROUP IN WINTER TEST MANEUVERS

Three officers and 30 enlisted men of the 1st Pursuit Group, Selfridge Field, Mich., departed on January 31st in four Transport planes (one of which was from Wright Field and one from the Middletown, Pa., Air Depot) for Mitchel Field, N.Y., to participate in the Winter Test Maneuvers of the GHQ Air Force. The Winter Test Group is scheduled to proceed from Mitchel Field to Concord, N.H., and then to Burlington, Vt.

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ATTACK PERSONNEL IN WINTER TEST MANEUVERS

Ten officers and ten enlisted men of the 13th Attack Squadron, Barksdale Field, La., were selected to represent the 3rd Attack Group in the Cold Weather Test of GHQ Air Force personnel and equipment in the New England area. Captain William P. Sloan, Air Corps, Supply Officer, and Sergeant Howard E. McKelvy, Supply Clerk, departed for Mitchel Field on January 25th as advance representatives for formation of the Winter Test Group and for the purpose of making arrangements for the quartering and rationing of the men of the main flight enroute to Mitchel Field. The remaining personnel in nine A-12 airplanes, led by Major Edward M. Morris, Air Corps, Commanding Officer of the 13th Attack Squadron, departed for Maxwell Field enroute to Mitchel Field on the morning of January 28th.

The weather at Barksdale Field seemed to rise to a spirit of cooperation and gave the people a light sample of what they may expect in the way of snow and low temperatures.

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MEXICAN FLAG PRESENTED TO A. C. TRAINING CENTER

On February 8th, Lieuts. Jose Del Rio and Fructuoso Perez Suarez presented to the Air Corps Training Center the national colors of Mexico. This flag was a gift from the Mexican Department of Aeronautics in appreciation of the cordial relations between the aeronautic branches of Mexico and the United States and for the courtesies and instruction rendered Mexican students at the Training Center.

The presentation ceremony was held in the office of General Chaney, and in addition to the two Mexican pilots who flew the flag from Mexico City to Randolph Field there were present Senor Benjamin Hill, Mexican Consul General; Senor Ortega; Major Prieto, student at the School of Aviation Medicine; Lieut. Mariano P. Munoz, now undergoing flying training at the Primary Flying School; and several members of the staffs of General Chaney and Colonel Harms.

Following the presentation, the visiting Mexicans were conducted on a tour of Randolph Field and were later entertained at luncheon at the Randolph Field Officers' Mess.

This Mexican flag adds to the collection of Central and South American flags, presented under similar circumstances, now in possession of the Air Corps Training Center.

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Twenty P-26A airplanes of the 20th Pursuit Group, with Major Armin F. Herold, Air Corps, in command, departed from Barksdale Field, La., on January 30th for Mitchel Field, N.Y., in connection with the Cold Weather Test Flight.

Colonel Roscoe Turner, noted civilian pilot, visited Shreveport, La., on January 23rd, using Barksdale Field as his airport. He delivered several addresses in the City of Shreveport and expressed himself as delighted with the facilities available at Barksdale Field.

Twenty-four officers and flying cadets, led by Major Warren A. Maxwell, departed from Selfridge Field, Mich., in P-26A airplanes on January 31st for Barksdale Field, Shreveport, La., to participate in aerial gunnery practice on ground targets at that station. Twelve enlisted men will be ferried to Barksdale Field in two Transport planes from that station in the near future to assist with gunnery operations of the 1st Pursuit Group.

PROMOTION OF NONCOMMISSIONED OFFICERS

A list is given below of noncommissioned officers (Technical Sergeants and First Sergeants) placed on the eligible list for promotion to the grade of Master Sergeant, Air Corps, January 1, 1936. Names which are marked with an asterisk are First Sergeants.

No.	
1	Skrobacke, Frank ≠
2	Browne, Fred*
3	Arnold, James C.
4	Arsenault, John J.
5	O'Callaghan, John P.
6	Lee, Standford J.
7	Lee, Otis K.
8	Wright, Edward J.*
9	Davis, Frank S.
10	Lamb, Estes
11	Finch, August
12	Tayloe, Gust A.
13	Weber, Lee R.*
14	Albee, Lidias H.
15	Myers, Joseph L.
16	Udell, William H.
17	King, Ernest N.
18	Dunlap, Roy C.*
19	Danie, Thomas*
20	Rogers, Richard
21	Napier, Wythe J.
22	Tingle, Dan W.
23	Booth, Brainard D.
24	Adams, Arthur H.
25	Riley, William J.
26	Duke, Robert*
27	Arnold, George
28	Mooney, Harry
29	Small, Ballard B.
30	Hanaford, Don A.
31	St. John, Ruben
32	White, Benjamin L.*
33	Laver, Joe G.*
34	Maxwell, Edcil C.
35	Miller, Edward
36	Wetteran, Edward W.
37	Moody, William T.*
38	Goff, Ira A.
39	Duprey, Joseph A.
40	Grimme, John P.*
41	McKnight, Charles H.
42	Locher, Joseph H.
43	Kretz, William
44	Bentley, Leonard L.
45	McAndrews, John
46	Malloy, Stephen A.
47	Ceccato, Peter
48	Walters, Clyde L.
49	Hobson, Earl
50	Stoser, Walter
51	McNeely, Ralph
52	Suggs, John M.
53	Leffler, Charles H.
54	Kendrick, Bryan J.
55	Carpenter, Ross
56	Kohn, Louis
67	Hohensee, Emmett F.
58	Harrison, George E.*
59	Ashby, Walter G.
60	Justice, Nye P.
61	Draper, Charles W.
62	Witsch, Henry A.
63	Ward, Leamon V.
64	Moloney, Philip E.
65	Gordon, Frederick J.
66	Davids, Ewald*
67	Moslander, Charles E.
68	Innes, Victor A.
69	Cobb, Horace W.
70	Swanson, Nels E.
71	Wing, Richard E.
72	McGhee, Lloyd H.
73	Doyell, Clyde W.
74	Darby, Harry
75	Shephard, Delana A.
76	Wentzell, James H.*
77	Sage, Hobson D.
78	Wheeler, Adam L.
79	Ritenour, Ervin W.
30	Stein, Joseph J.
81	Schmidt, George E.
82	Leroy, Harold D.
83	Brown, Lee E.
84	McCartney, George D.
85	Blais, James G.
86	Haffner, Hans G.C.
87	Wiedekamp, Karl T.
88	Hluchan, Charles
89	Herb, Donald P.
90	Auer, Adam M.
91	Hill, James W.*
92	Cheska, Benjamin A.
93	Albin, Louis B.
94	Graham, John
95	Downing, Harvey J.
96	Miller, Fred P.
97	Turner, William H.
98	Hopper, Walter S.
99	Apple, William V.
100	Leary, Vernon G.
101	Raymond, Edgar J.
102	Jones, Hurley D.
103	Van Matre, William H.
104	Jackson, Paul B.
105	Roberts, Carl C.
106	Hoijer, Richard E.
107	Grabsky, Walter*
108	Williams, Wallace H.
109	Filkins, Joseph A.
110	Schaeffer, Chris J.H.
111	Willison, Thomas L.
112	Peckham, Russell C.
113	Valtierra, Leobardo
114	Gibbins, Stanley K.
115	Simons, Wilbur J.
116	Baros, Rudy J.
117	Fisher, George H.
118	Thermenos, Nicholas*
119	Jewell, Arvin B.
120	Glasscock, Harry
121	Boward, Richard C.
122	Koziboski, Edward A.
123	Fitzgerald, John E.
124	Chambliss, John R.
125	Stanowich, Steve*
126	Mueller, Charles
127	Merian, August A.
128	Fusz, Charles F.
129	Hobart, Clyde J.
130	Himes, Olin C.
131	Mathews, Daniel A.
132	Dreier, Elmer L.
133	Maroul, John J.
134	Glasscock, Benton D.
135	Domes, Johann
136	Palmer, Clarence A.
137	Myers, Allen G.
138	Kelly, Robert K.*
139	Smith, Alfred N.
140	Casto, Clyde R.
141	Moorhead, William B.
142	Cattarius, Adolph
143	Thompson, Benton T.
144	Hoffman, Carl
145	Thomas, Robert H.
146	Tupper, Hobson
147	Drobin, Joseph S.
148	Hooe, Roy W.
149	Clark, Irvin L.
150	Jones, William L.*
151	Stolte, Arthur
152	Moore, Virgil
153	Casey, Patrick T.*
154	Burroughs, John J.
155	Wallace, John R.D.
156	Revert, Artie L.
157	Forrest, James A.
158	Freathy, Albert E.
159	Hartley, Earnest
130	Henneck, Michael P.
161	Townsend, William B.
162	Fox, William B.
163	Redifer, Earl B.
164	Randles, Arthur E.
165	Scott, Elliott
166	Hughes, Raymond J.
167	Sleeth, Edward
168	Pope, William E.
169	Miller, Joseph J.*
170	Silvers, Lee
171	Marth, Hugh J.
172	Reist, Emil
173	Akers, Thornton
174	Tomberlin, George D.
175	Junkert, Albert G.
176	Foster, Edwin C.
177	Hamilton, Robert E.
178	Callaghan, George
179	Croy, William D.
180	Sudduth, Clarence E.
181	Walsh, Lambert C.
182	Gray, Henry H.
183	Mitchell, Gregory A.
184	Ferguson, Archie L.
185	Brown, George D.
186	Scott, Grover B.
187	Axford, Leo W.*
183	Harmon, William T.*
189	Brees, William M.
190	Crawford, Wallace W.
191	Field, Charles B.
192	Dozier, John
193	Schooler, Oscar H.
194	Philapy, Russell L.
195	Sieberaler, Frank J.

≠ Appointed Master Sergeant, January 2, 1936.

196 Hahn, Richard W.*
197 Cayhue, Arthur H.
198 Hewitt, Albert G.
199 Dryer, Howard H.
200 Grey, Joseph R.
201 Totman, Theodore C.
202 Johnson, Lloyd N.*

NOTE: The delay in the publication of this list has been caused by the receipt of inaccurate data as to total length of Army service of certain noncommissioned officers, necessitating a thorough check with available records in order to determine the proper place of each man on the list.

It will be noted that the names of a number of noncommissioned officers appear on the list, especially near the top thereof, who were not carried on previous lists. This condition is due principally to the fact that such men, appointed Technical Sergeants in 1930, have recently acquired the minimum of five years' service in the second or higher grade in the Air Corps to establish eligibility for the grade of Master Sergeant, Air Corps. Their total length of Army service thus places them ahead of noncommissioned officers with less service. The large increase in the total number of men on the qualified list is also probably due to this same condition.

Those Technical Sergeants appointed in 1931 will likewise acquire five years' service in grade in 1936, and, if subsequently recommended for promotion, will be placed on next year's qualified list in their proper places according to total length of service. There will thus not be so many Technical Sergeants acquiring the five years' service in grade after 1936.

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PHOTOGRAPHIC BOARD CONVENES

A Board of Air Corps officers met at Wright Field, Dayton, Ohio, on January 13th, for the purpose of determining the most suitable type of aerial photographic equipment, ground equipment, and processing equipment for use by the Air Corps, the type, quality and quantity of photographs that may be expected from Corps Observation, GHQ, and Corps of Engineers, to recommend a comprehensive development program for adequately meeting the needs of the service, and to suggest such changes as may effect economies in the use of photographic supplies and equipment. Members of the Board were:

Major Frederick W. Evans, Maxwell Field, Montgomery, Ala.

Major Jasper K. McDuffie, GHQ Air Force, Langley Field, Va.

Captains Albert W. Stevens and Joseph H. Hicks, Wright Field, Dayton, Ohio.

Captain George C. McDonald, Office of the Chief of the Air Corps, Washington, D.C.

Captain Edwin C. Bobzien, National Guard Instructor, Baltimore, Md.

Captain George W. Goddard, Chanute Field, Rantoul, Ill.

Captain Paul T. Cullen, Mitchel Field, N.Y.

The Board was in convention until January 20th, and a report of its findings was submitted to the Chief of the Air Corps.

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TEST FLIGHTS OF THE TC-14 AIRSHIP

The TC-14 airship at Scott Field, Belleville, Ill., has made 23 test flights for a total of 65 flying hours. The airship has proven successful to those officers who are qualified to fly it. The TC-14, by using only two motors, is able to reach a speed of 72 miles an hour. With all three motors, the airship, though the engines have never been opened wide, is capable of a speed in excess of 85 miles an hour, which is high for this type of aircraft. The TC-14, a sister ship to the TC-13, was commissioned for service August 28th, 1935.

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DEMONSTRATION OF ATTACK AVIATION TACTICS

Nine officer pilots and nine enlisted mechanics, in nine A-12 Attack airplanes of the 8th Attack Squadron, representing the 3rd Attack Group, departed from Barksdale Field, La., for Maxwell Field, Ala., on the morning of January 27th, for the purpose of conducting a demonstration in the tactics, technique and employment of Attack Aviation for the students of the Air Corps Tactical School. The demonstration included the use of parachute bombs and lime spray, representing chemicals.

Lieut.-Colonel Earl L. Naiden, Commanding Officer of the 3rd Attack Group, and Major Oliver S. Ferson, Group Operations Officer, with two enlisted mechanics in two Curtiss A-12 Attack airplanes, departed for Maxwell Field on the afternoon of January 27th for the purpose of observing the Attack Demonstration, which was conducted on January 28th. The flight returned on January 30th.

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TEXAS RESERVE OFFICERS SET MARK IN CREDIT HOURS

Nineteen Air Reserve pilots in the Brownsville, Texas, district have set a mark in credit hours earned which is believed to establish a record unequaled in any part of the United States. These 19 officers, ranging in rank from Major to Second Lieutenant, have a total of 8,609 active duty credit hours in grade, and 14,064 inactive duty credit hours in grade. The requirements of the War Department are that each Reserve officer must earn 100 hours active and 100 hours inactive duty hours while holding his present grade. The average of the Brownsville Reserve pilots is 453 hours' active duty credits and 740 hours' inactive duty credits.

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The News Letter is indebted to 1st Sergeant Elmer C. Lindquist, Air Corps, Connecticut National Guard, Hartford, Conn., for the very attractive cover page featuring this issue of the News Letter. Sergeant Lindquist has submitted several other cover designs which will be used in future issues.

Thank you, Sergeant Lindquist, and let us hear from you often.

MILITARY AVIATION

By Lieut.-Colonel B.Q. Jones, Air Corps

Part II.

POWERS AND LIMITATIONS OF ARMAMENT AND EQUIPMENT

Machine Guns.

Machine guns are excellent weapons when they work. When they don't, the predicament is acute if a plane is caught alone. Flexible guns can be worked on to a limited extent in the air and can be put back in commission, if time is available. All that can be done to the fixed guns is to pull the charging handle. If the guns clear, O.K. If they do not, nothing can be done about it. Only one flexible gun is now provided each gunner. If that gun malfunctions seriously, the sector defended exclusively by that gun is defenseless. In the case of two seaters, it means the fixed gun of the pilot is the last resort and, if the plane fights at all, it has to fight as a single seater.

Planes operating alone, especially if caught by superior performing enemy Pursuit, are the ones reported missing, if their machine guns stop functioning. A most lamentable situation is to be caught without ammunition. Long running fights deep into and out of enemy territory can exhaust the supply of ammunition. The ensuing tragedy is sickening. Flying in units of several planes provides safeguards against such situations.

The personnel, motors and fuel tanks of airplanes are vulnerable to calibers .30 and .50 machine gun fire. The probability is too remote of hitting a structural member that will cripple a plane. The airplane structure is very light, with the barest skeleton of necessary structural members. The older fabric covered models could be perforated with calibers .30 and .50 machine gun fire without bringing them down. Unless modern metal wings can be seriously damaged by such calibers, or unless the hydraulic impact of the caliber .50 bullet upon gasoline filled wing tanks will weaken the wing structure, stronger pursuit armament will be necessary. The defensive fire of multi-seaters, especially if in good defensive tactical formations, is sufficient to keep Pursuit at respectable distances. Also, if a defensive formation has time to maneuver, it can maneuver so as to make it very difficult for formations of Pursuit to deliver coordinated attacks. Unfortunately, a tactical formation affording a good defensive fire against Pursuit, is the best target for A.A. fire. About the best tactics for Pursuit is to herd multi-seaters into close defensive formations over A.A. batteries. A gun firing a supersensitive fuse shell with sufficient explosive charge to damage any airplane part struck is necessary, if Pursuit is to perform a useful defensive role against large Bombardment formations. When shell guns are provided, then the entire airplane becomes a vulnerable target, instead of, as at present, only the personnel, engines and fuel tanks.

Flexible guns are still limited to caliber .30 because of the difficulty of mounting guns in light airplane structures. The caliber .50 can be fired as a fixed gun forward. Pursuit planes are so equipped.

Airplane speeds have increased a 100% since the war, while caliber .30 machine gun velocities have remained the same. The instrumental velocity of the caliber .50 is 2,500 foot seconds at 78 feet. The average accurate firing range against small air targets is still the same as during the war, 200 yards. The effective ranges of the calibers .30 and .50 are greatly in excess of the deflection ranges at which they can be accurately fired into an airplane cockpit or engine. The problem of deflection firing has increased with increased airplane speeds. Flat trajectory, high muzzle velocities are required to compensate for them. There has been no such compensation to date.

Ground targets as large as tanks permit of short range, accurate aimed fire from the forward fixed guns of low flying planes. Rear guns are ineffective because of the great deflections at the speeds flown. Only one such individual target can be effectively fired upon in each attack or dive. This requires repeated attacks. For formation attacks, against ground and air targets, separate targets are necessary for each plane. The danger of collision between airplanes is too great to permit of simultaneous concentrations of fire upon a single target by the forward guns of even a 3-plane formation. Troops in long columns are most effectively attacked by planes in column; troops in an area, by planes abreast. Their fire against such targets amounts to a fast rolling barrage.

High speeds require the firing of flexible guns from turrets or from behind the protection of hoods. The physical effort is too great to swing guns exposed to the airblasts. Exposed to the air flow, they have a marked harmful effect upon high speeds. A poorly designed turret can reduce the high speed 5%. The gimble mounted flexible guns and bucket swung rear seats of the two-seaters afford excellent firing platforms under their protecting hoods. However, any closed turret with the gun firing through a small aperture, impairs the visibility of the gunner and the ease with which he can follow a target, swing and aim his gun.

Weapons of Attack Aviation

The bombs and chemicals of Attack Aviation are laid from low altitudes that eliminate the need for bomb sights. To make the bombs "stay-put" on the targets and prevent ricocheting, they must be provided with parachutes. To prevent bomb fragments from damaging the planes themselves, there must be delayed action. Dropping the parachute bombs into heavily wooded areas, will hang the bombs in the trees by their parachutes. The delayed fuze action of the bombs makes necessary considerable distances between successive waves of planes attacking a small area, and requires preliminary maneuvers for a sudden, surprise attack upon a broad front, or a simultaneous oblique attack by all planes upon a long, and especially a winding defile. If the defile lies at the bottom of a deep ravine, then attacks paralleling the defile should be made. The only precaution following planes have to take in laying chemicals is to keep out of the propeller wash of leading planes. This is guarded against anyway, on account of the danger of the propeller wash to planes flying at low altitudes, particularly in close formation. Demolition bombs require penetration to secure the "tamping" required for effective explosion. Reasonable altitudes are necessary to secure required penetration. This forces the attackers into the role of light Bombers when they carry demolition bombs and, at altitudes of 1,000 feet, makes them vulnerable to all forms of ground fire from small weapons.

Bombing

The effectiveness of Bombardment attacks must be intelligently understood if worthwhile results are to be expected. The problem of bombing grows more serious at high speeds. For reasons of security and surprise, it is most desirable to come in over the targets at high speeds. While such speeds can be as high, theoretically, as 300 mile an hour diving speeds, effective bombing at such speeds is difficult. The blast effect of 1,100 and 2,000 lb. bombs is bad below 2,000 feet. Also, below that altitude accuracy bombing by the use of bomb sights is not practical. The records of the ceilings at Bolling Field during daylight hours from August 15, 1935, to October 31, 1935, both inclusive, showed that, out of 724 observations made, 13.8%, or 100, were below 2,000 feet.

While conditions of poor visibility, bad weather and darkness, are excellent for security and surprise, they preclude accurate bombing of targets of small dimensions, such as bridge piers, naval vessels, power plants, locks, etc. You cannot bomb what you cannot see. Flares of one million candle power will illuminate approximately 4 square miles of terrain with an average intensity of moonlight. Approximately 1 square mile of terrain will be illuminated by flares of 350,000 candle power.

Alerted anti-aircraft batteries using their searchlights to locate raiding bombers assist bombers in locating their targets. Individual targets may not be identified in critical areas and successfully attacked at night, but the searchlight beams will assist enemy bombers greatly in locating those centers and in delivering area attacks upon them. On moonlight nights distinctive targets can be accurately bombed without flares. Night searching operations using flares preclude surprise and thoroughly alarm the enemy.

Radio, is the greatest single aid to long distance aerial navigation. Peace time methods of radio operating stations will be fraught with danger in war. They would serve as the best possible means for guiding and orienting enemy bombers. However, the value of radio for night and bad weather flying is too great not to expect a reasonably safe development of its use in war.

The radio compass has the advantage of simplicity over the radio range beam. It eliminates troubles with the split beam and saves time in accurately locating the station. Both radio compass and beam navigation should be used.

Airplane radio sets are most valuable for training. Their combat employment is prejudicial to security and surprise. If not carefully maintained, they are noisy and conversation is difficult. Voice communication is slow and difficult. The best principle of employment of radio is "Silence is Golden". Let the responsibility for breaking radio silence rest with the senior officer commanding the flight.

The value of aerial photography is too well known to need discussion.

Flight instruments have opened up the field of flying tremendously. Properly maintained, they give little trouble and make flying possible in all conditions of weather, day and night, except icing. Icing conditions are those that cause the condensation and freezing of water vapor on the airplane and propeller. If continued, the loss of efficiency through the formation of ice, will destroy the efficiency of the plane and force it down.

The reliability, power and efficiency of modern engines are remarkable. They are being improved by high octane fuels and injection feed carburetion. Diving speeds of Pursuit have, however, exceeded the capabilities of engines to keep up with them. The valve mechanisms, gear driven superchargers and crankshaft speeds cannot stand up under the high engine revolutions induced by long power dives. Drop the P-26 over 8,000 in a power dive with any power on at all, and when it is pulled out of the dive, the engine is through; not a happy thought for a pilot in combat, especially over the lines. In such dives normal maximum engine revolutions of 2,200 r.p.m. easily run up to 3,600 r.p.m.

Variable pitch propellers have come to the rescue for short take-offs. Their use enable the engines to operate at higher r.p.m.'s on the take-off, which gives greater power and more rapid accelerations. Similarly the trailing edge flap, acting as an airbrake, makes it possible to land in short fields. The wheel brakes shorten the roll after landing. The new Bombers are calculated to take off and clear an obstacle 50 feet high at a distance of 2,000 feet from the starting point; the present Bomber will do so in 1,300 feet; the present Pursuit, in 580 feet.

Low wings and retractable landing gears make possible safe emergency landings in marshes and in abnormally short fields. It does so by preventing turnovers and by shortening the run after landing. The automatic pilot is what its name indicates. It flies a plane more accurately than the human pilot. It can fly in turns, climbs and glides. It solves the problem of blind, or instrument flying, and, if it can be successfully linked with an effective bomb sight, should materially improve the accuracy of bombing. It holds promise of solving the problem of blind landings, when linked up with radio.

PERSONNEL LIMITATIONS.

The capabilities of any good weapon exceed those of its combat crews. The value of the airplane as a military weapon depends upon the native ability, training and experience of its operating personnel. The present one year's course for Air Corps student fliers does two things. It eliminates unsuitable personnel (an average of 59% a year over a 6 year period), thereby reducing accidents and saving lives and equipment. Second, it delivers personnel to tactical units ready for unit training. Good unit commanders who concentrate upon this new material, can, with approximately sixty hours of profitable flying, develop them into excellent combat personnel. From then on, only experience, industry and their native ability can improve them. Raising the standards of student proficiency, coupled with vigorous elimination, could correct to a considerable degree, for the deficiencies of war training by insuring the retention of only the very best personnel. Unit commanders in war should be encouraged to reclassify their personnel and order those deficient to reclassification centers. Deficient personnel are not only combat liabilities but are incipient sources of failures of operations.

Good leaders have good units. When something is wrong with a command, look first for a deficiency in the commander. One unit will specialize on close formation flying neglecting combat training, night and instrument flying and field exercises. While close formation flying has its counterpart in the close order drills of ground troops, there is a positive skill and hazard involved that explains why pilots like it. It is precision flying conducive to combat discipline, to accuracy flying and to the development of mutual confidence and team play. There is no better method of instilling air discipline and of developing and gauging a pilot's flying ability, judgment and reliability than by close formation flying.

Unit commanders deficient in a particular phase of flying, are prone to curtail that character of flying in their units. This may be explained away by assuming that those commanders unconsciously avoid operations disparaging to their own abilities.

What is being developed in tactical units today in flying, is a fair indication of what could be expected in war.

Visual daylight navigation flights can be flown operating distances to any place.

Visual moonlight navigation flights can be flown where identifiable land marks are available for accurate orientation. Starlight, but moonless night flights, can be made along rivers and large bodies of water. Muddy water is easier to see on such nights than clear water.

Flights on black nights can be made for short distances without requiring radio. However, the pilots will require identification ground lights to get back to their airdromes if radio is not used.

Celestial navigation flights can be made for considerable distances "over the top", that is, above the clouds.

Flights to destinations obscured in fog, can, at present, be made by a few individual pilots, not by units.

The only enemy objectives that can be located, observed or attacked at night are those that are large and that can be located with respect to visible, identifiable landmarks. (As previously noted, enemy searchlights may assist materially.)

Large close formations can be flown at night by using the plane's navigation lights, otherwise only by small formations. Loose tactical formations in column can be flown at night by the use of identifying airplane lights obscured from the ground.

Planes with navigation lights can be picked up by other planes at short distances. Planes without lights cannot be picked up short of collision distances.

The air is too big for the limitations of human vision. Weather conditions, distances, airplane camouflage, terrain and the speeds at which planes move, make it difficult for patrolling pilots to pick up other planes in the air. The noises of their own planes drown out the noises of other planes.

Interception is unreliable without the assistance of ground intelligence nets.

Single seater Pursuit planes cannot afford protection to other classes of aviation on long combat flights. Their fuel supply is too limited for any combats of long duration in which they might become involved.

Formations of airplanes cannot deliver coordinated attacks of aimed concentrated machine-gun fire upon small targets. The danger of collision is too great.

The amount of flying to be expected of combat personnel can be estimated somewhat from commercial practice. The Department of Commerce limits transport pilot flying on any one day to 8 hours, any one week to 30 hours and any one month to 100 hours. The particular combat situations as well as maintenance factors will dictate the amount of flying required. The hard steady grind of flying falls upon Observation aviation. Attack and Bombardment fly more according to the employment of G.H.Q.Reserve forces. All long flights into enemy country are monotonous and a mental strain upon the crews, threatened as they may be with unexpected attacks from any quarter at any time. Pursuit flights are of relatively short duration, but full of action when things begin to happen.

REQUIREMENTS:

The tactics, technique and employment of the four classes of aviation have been covered at the Special and General Service Schools. The requirements for them are determined from their employment.

The initial requirements for military aviation are determined from the roles it plays as a member of military team in the theater of operations. The most intimate relationship between military aviation and the ground arms obtains in Observation. Observation aviation provides immediate returns to all ground units that employ them. The requirements for this class of aviation are limited only by the value of the service they can render to those units. There is a distinct need for them by all artillery units, by the commands and staffs of all divisions and higher units and by the commands and staffs of all small units operating independently or upon any important mission.

The importance of Observation aviation to the ground forces makes it equally important for the enemy to endeavor to curtail its employment. The most positive measure available to the enemy for this purpose is Pursuit aviation. As soon as enemy Pursuit aviation comes into the picture, the requirement is immediately set up for opposing friendly Pursuit. Hence, wherever Observation aviation is contributing valuable service to the ground forces. Pursuit aviation is necessary to protect it against hostile Pursuit and to interfere as much as possible with the operations of hostile Observation aviation. The requirement, therefore, for Pursuit aviation operating as a member of the military team in the theater of operations, is initially determined by the activity of hostile Observation and of hostile Pursuit.

The role that Attack aviation can perform as a member of the military team in theaters of operations is determined by the direct contribution it can make to the success of the operations of the ground forces. Attack aviation is essentially a dispersing, delaying, harassing and denying force to be employed primarily against targets that cannot be reached by the weapons of other arms. The knowledge of the presence of Attack aviation will, undoubtedly, cause the enemy to dispose his forces in his rear areas and on the march so as to offer few opportunities for air raids. It is apparent, therefore, that the presence of Attack aviation as a member of the combat teams in the theaters of operations must be made known to the enemy, if his forces and installations are to be dispersed and his troop movements slowed down. Attack aviation, therefore, can contribute valuable service directly to the operations of the ground units by their presence in the theaters. The requirements for Attack aviation in support of the combat arms is determined first, by the need for maintaining an air threat against hostile rear areas, and second, by the number of profitable air targets that develop in special situations. The employment of Attack aviation brings up a second requirement for Pursuit in the theaters of operations. As in the case of hostile Observation aviation, Pursuit provides a positive means for defense against attack raids. If the strength in Pursuit aviation in the theaters is only sufficient to meet the requirements set by the defense of friendly and the attack of enemy Observation aviation, additional units of Pursuit will be required wherever the presence of hostile Attack aviation is known.

Occasional targets will exist in the rear areas of hostile forces for profitable attack by Bombardment aviation. To have a direct and contributory value to the operations of the other arms, the destruction of, or damage to these targets must reduce the strength and handicap the employment of the hostile forces in the theaters. The presence of Bombardment aviation as a member of the military teams in the theaters of operations will force the enemy to disperse his large installations. Lines of communication, rail, water and highway, vital to the front line troops, afford profitable targets, if attacked at times when movements of supplies and troops over those lines are necessary to the success of hostile operations. The protection of such critical points will cause the diversion to rear areas of ground and air units and equipment for their air defense. Again, as in the case of Attack aviation, the presence of hostile Bombardment units in the theaters requires the services of friendly Pursuit units as a positive counter measure.

It is apparent, if military aviation is to accomplish its primary mission prescribed by the War Department, there are definite requirements for all four classes as members of the military teams in the theaters of operations.

The picture just drawn portrays a basis for establishing the requirements of military aviation in its primary mission of assisting the other arms in active combat. The only class of aviation that can be uniformly distributed through the other branches is Observation. Economy and mass do not warrant a similar distribution of the other classes except in active theaters. G.H.Q. controls their distribution, using them as a G.H.Q. force where they are of most value. Their mobility permits them to be shifted from theater to theater with great expedition.

The employment of Attack and Bombardment against enemy air forces, presupposes conditions that prevent enemy dispersion. Except when forced by conditions of terrain and weather, it cannot be assumed an enemy will be careless enough to dispose his air units so as to offer profitable targets for air attacks. However, bomb proofs and adequate antiaircraft defense of airdromes may make air attacks more costly to the attackers than to the defenders.

A most valuable contribution that military aviation can make to the conduct of a war is successful attacks against those industries of the enemy vital to his war efforts. To be successful, such attacks should be made by Bombardment aviation in daylight. Daylight visibility is essential for the identification and the precision bombing of individual buildings, particularly if located in large cities. The speed and range of Bombardment aviation are such that they cannot be prevented from reaching their targets. Adequate defenses of vital areas may inflict severe losses. It is for the superior commander to decide whether the success of a mission warrants such losses.

Developments in range, size, performance and power of Bombardment aviation are creating a specialized Bombardment type that is outgrowing its possible economic employment in the theaters of operations as a member of the military team. The roles that super-bombers could perform can be performed more suitably and economically by smaller types. The range and power of these modern super-bombers call for consideration of their employment against distant major targets beyond the concern of the theater commanders. Their employment, therefore, involves considerations dealing with the strategy of the war as a whole. War strategy is the concern of G.H.Q., hence, only G.H.Q. can determine the roles that super-bombers should play. In determining upon the employment of these super-bombers against distant enemy targets, consideration must be given to possible enemy reprisal operations, should the enemy be likewise equipped.

For the defense of the frontiers, which, in part, contemplates operations as land-based aviation against hostile fleets, economy precludes the development of a special force other than coast patrol units. Any threat of invasion across our frontiers will require the movement to the threatened areas of all members of the military team. Should these movements be too slow, aviation can initiate operations in advance of the arrival of ground troops. Basically, the requirements for special coast patrol observation units will depend upon the naval situation. There is a requirement for coast patrol Observation aviation as a reconnaissance force to cover the gap between our navy and the shore. In addition to the units operating with the other arms, a strategic force of super-bombers can perform a most valuable role in such situations.

To assist in the defense of critical areas, only one class of military aviation can be of value, i.e., Pursuit. The requirement for Pursuit for this purpose will depend upon the number of critical areas vulnerable to attack by hositle Bombardment. Important in this connection is an appreciation of the influence exerted by the threat of Bombardment aviation to force nations to withhold from the theaters of operations those units and armament required for the air defense of critical areas.

TRENDS OF MILITARY AVIATION:

Has the development of military aviation reached a stage of stability? It is my opinion it has for the accomplishment of two of its missions; one assisting the other arms in combat, the other assisting in the defense of critical areas. What it can do as an independently operating G.H.Q. force, remains to be developed. There are many schools of thought, but as yet no experience. What super-bombers can do to spread destruction on the high seas and deep into the interior of enemy territory is an open question.

It remains for the commands and staffs of all units to learn how to employ their air components. Staffs include air officers to assist in air matters. Observation aviation can provide a commander with positive, not negative, information of enemy dispositions and facilities bearing on his situation. It is every commander's responsibility to know and decide what damage his aviation can inflict, to what extent air attacks may assist his other arms, and to issue combat orders that will insure the economical employment of his air units as members of his military team in a way that will contribute positively to the success of his mission.

What are the present trends of military aviation? The trends are indicated by the trends of airplane development. Airplanes are emphasizing speed, size and power at the expense of utility. So much attention is being paid to speed, range and combat load that the military requirements of utility embodying low costs, maneuverability and small size are being lost sight of. From the viewpoint of their primary mission of assisting the other arms in combat, the trend towards larger and heavier planes is diverting them from that mission. If combat aviation has the power we claim for it for military operations, it must be utilized in all profitable fields. Those fields cannot be restricted to operations from rear areas against distant targets. To contribute its share as a valuable member of the military team in combat, it must be physically associated with the other arms. That means three distinct types of airplanes; one short range for intimate employment with the other arms; another long range for employment as a pure G.H.Q.Reserve force against more distant targets, and a third super-class for employment against enemy navies and distant critical areas.

CONCLUSION.

The purpose of this paper is to point out those practical considerations of military aviation that should be appreciated by all who are to have a hand in its war employment. If, when confronted with problems concerning military aviation, we will visualize the problem as one dealing with an organization of vehicles that use the atmosphere as its roadbed, we will have dispelled most of the mystory of aviation. If we will continue to apply the analogy to other forms of transportation and associate an airplane's combat load, speed, range, maneuverability, horsepower and structural strength with their counterparts in other vehicles, we will have a sound conception of the comparative performance powers and limitations of the several classes of military aviation. With this conception as a point of departure, we are ready to understand the value of the airplane as a military weapon and to make decisions on the utility and employment of military aviation.

Finally, I would like to leave this thought with you.

The airplane is a valuable, though expensive weapon of war that must be conserved in its employment to roles that contribute positively to the success of the operations. It is our responsibility to know just how it can, and just how it cannot be used as a means of waging war; both independently as a distinct arm, and dependently as a subordinate member of the military team.

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DEATH OF FLYING CADET ATKINSON

By the Kelly Field Correspondent

Flying Cadet Robert S. Atkinson died at the Station Hospital, Fort Sam Houston, Texas, at 5:15 p.m., January 21st, as a result of injuries received in an airplane accident about 8:45 a.m. the same day. He was flying solo in an A-3B airplane going out on an attack mission. He was taking off individually from Kelly Field when his right wings struck the top of the water tower located on the north edge of Kelly Field. He lost a portion of his right wing, including aileron, and continued for some 300 yards before he struck the ground. The airplane remained right-side up and did not burn, although it was completely demolished.

Cadet Atkinson was removed to the Station Hospital at Kelly Field for emergency treatment and then rushed to the Station Hospital at Fort Sam Houston.

It is believed that on the take-off the water tower was dead ahead of him and in the blind spot caused by the engine cowling while the airplane was in a climbing attitude. It is not known whether he saw the tower or not, but it was observed that his plane had begun a left-hand turn shortly before striking the tower.

Cadet Atkinson was born in Tonopah, Nevada, July 26, 1910. He was a member of the Reserve Officers' Training Corps during 1927 and 1930. He attended Stanford University from 1929 to 1932, when he was graduated with a BA degree. He then took a post-graduate course at that university during 1933 and 1934. After completing the primary and basic courses at Randolph Field, he reported to the Advanced Flying School on October 12, 1935. His parents, Mr. and Mrs. H.H. Atkinson, reside at Reno, Nevada. His father accompanied the body from San Antonio to Reno for burial.

Cadet Atkinson was considered one of the outstanding cadets in the class, not only in his flying but in his academic and military activities as well. The entire school experienced the deepest regret over the loss of one of the most promising students in the class, and extends to his family and friends their sincere sympathy.

FLYING CADET COMPETITIVE DRILL

By Lieut. Jack W. Hickman, C.E.

Most of the readers will know, and a good many well remember, that all is not banks and turns at the Primary Flying School. And a goodly portion of the time allotted to "ground school" is spent with a caliber.30, Model 1903, Springfield rifle in hand or on shoulder.

As a matter of fact, the fledgling is introduced to the rifle before he meets the stick and the rudder. Whether the acquaintance be pleasant or distasteful, the friendship ripens during the entire period spent at Randolph Field. Oflate, some of the erring cadets have chosen - or have been chosen - to spend their otherwise free afternoons with their comrades, the models 1903. This period of communion has been spent pacing the ramp, Springfield on shoulder, one hour for each excess demerit received during the previous week.

But such familiarity has not gone for naught. This exercise, coupled with constant drill which had advanced from the school of the soldier thru squad drill, platoon and company drill, and even battalion drill (not possible before Randolph Field was completed due to dearth of numbers), accounts for the excellent showing made Saturday morning, January 18th, at a competitive drill followed by a review and inspection.

Though lacking some of the fanfare and glittering brass which accompanies a parade at West Point, this exhibition by no means lacked color. Freezing weather notwithstanding, the spectators - composed largely of Southern beauties together with a few reporters and photographers from local newspapers - were treated to a good show. Accompanied by the drum and bugle corps from the 15th Field Artillery, Fort Sam Houston, the embryo pilots went through their maneuvers before Head Judge Lieutenant Arthur Meehan, erstwhile Pursuit pilot and football coach, and his assistants, recent West Point graduates also assigned to the flying school.

A nip and tuck battle ensued. Several times rifles almost, but not quite, slipped through benumbed fingers, but the drill was conducted with such spirit and precision that judging was rendered extremely difficult. The contest still undecided, the battalion passed in review before Colonel Harms, Commandant of the School, and Captain Weikert, Commandant of the Flying Cadets, and then lined up for inspection. And it was only after this final test that the victor could be discerned. Out of a possible 300 points, "A" Company - the "flankers" - had garnered 235 to the 232 points "B" Company - the "runts" - had received.

And so "A" Company became the winner of - the silver loving cup? A huge bronze statue? Oh, no! But the prize was probably far more appreciated by the victors than would have been the most beautiful loving cup or statue, for they were excused from reveille and inspection on the following Saturday morning!

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THE 27TH SQUADRON'S CRYING CLUB

By the News Letter Correspondent

The 27th Pursuit Squadron, Selfridge Field, Mich., has formed a Crying Club! It seems to be made up of expatriates of the Sunny South and Far West, - from lands where sub-zero weather is something in a book. However, the "two flying suit, face mask climate" here is not without its novelties. At no other Air Corps post can the gentle art of ice fishing be learned so easily. It is done like this: Get a pocket compass, because it is sure to snow every time you go outside. Follow a northeast course out over the lake till you find Captain Norme Frost's shanty, or you end up in Canada. You can tell when you reach Canada - the policemen are so polite. To return to the shanty, if it is locked, break the latch. It will give Captain Frost something to do. Once inside the shack, you build a fire on the ice. Then you spend half an hour cutting a hole through to the water. You cut a small hole, so you can see the fish but they can't see you. How it's done? Maybe you put up a "One-Way Street" sign. Then when the fish come up to warm their hands at your fire, you hook the largest one in the lake. In fact, he is three inches larger than the hole. By this time the fire is dying out, so you chop up various parts of the shanty, the seat going first, just to add to the general comfort and hominess. That done, you hack the hole in the ice large enough to pull in your fish. With the last whack you cut your line. But the fish sticks around, because by then the fire has melted through the ice and you fall in. So the fish has you for dinner.

But some members of the Crying Club would rather go ice skating. It is a game to see who can slide the farthest in the most ridiculous position. Cadet Allan Sewart made it all the way across the new rink on the back of his head.

Most of the club members confine their winter sports to volley ball in the hangar. There being no adequate gymnasium on the field, the game is played in the wide open spaces between our few airplanes.

When the PB-2's are received, the "Crying Club" will no longer be able to pursue its various activities. But no objections are anticipated. The Club will be abandoned readily and gladly. Just now the members are enjoying a few weeks' recess to go to Barksdale Field, La., for gunnery and bombing.

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WORLD WAR "ACE" PASSES ON

Major James A. Meissner, Air Reserve, an officer with a distinguished record during the World War, died at his home in Birmingham, Ala., January 16, 1936. He was stricken with pneumonia on January 10th, and was laid to rest at Macon, Ga., on January 19th. The 106th Observation Squadron, Alabama National Guard, sent a flight of honor. Among the mourners were delegations from the Reserve Officers of the Fourth Corps Area. Flowers and messages were sent by notable flyers from all over the world.

Major Meissner held the unofficial title of "Ace," being credited with the destruction in aerial combat during the War of seven enemy airplanes and one balloon, and being awarded the Distinguished Service Cross with Oak Leaf Cluster for heroism in action. He was born in Londonderry, Nova Scotia, Canada, July 30, 1896. He was educated in the public schools and high school of Brooklyn, New York.

Prior to enlisting in the Aviation Section, Signal Corps, shortly after America entered into the World War, he attended Cornell University for three years, pursuing a course in mechanical engineering. He completed the full course following his discharge from the Army, and received the degree of Mechanical Engineer.

Following his enlistment in the Aviation Section, Signal Corps, Major Meissner took his ground school training at the School of Military Aeronautics, Cornell University, May 28 to July 28, 1917. He was then ordered to duty overseas and received his flying training at the Aviation Instruction Centers at Tours and Issoudun, France, and his aerial gunnery training at Cazaux, France, following which he was assigned to duty with the 94th Pursuit Squadron, March 8, 1918. During his service at the front he was stationed in the Toul Sector, and later participated in the Chateau Thierry, St. Mihiel and Argonne offensives.

His work as a pilot was of such an outstanding character that on July 24, 1918, he was assigned as Commanding Officer of the 147th Aero Squadron, and he served with this organization until November 14, 1918.

He received his commission as a 1st lieutenant, December 12, 1917, and was promoted to Captain, October 3, 1918. By virtue of his distinguished service, he was given the rating of Junior Military Aviator on October 4, 1918, which carried with it promotion to the grade of Major. The acts of heroism which resulted in his being awarded the Distinguished Service Cross and Oak Leaf Cluster are enumerated, as follows:

1. On May 2, 1918, at 12:03 o'clock, this pilot attacked three enemy planes at an altitude of 4800 meters over the Foret de la Rappe. After a short fight he brought down one of the enemy planes in flames. During the combat the entering edge and the covering of the upper wings of this pilot's plane were torn away. In the midst of an intense enemy barrage, Major Meissner, by exercising cool judgment, succeeded in regaining our lines and landing near Laferne de Nauceville. This combat and result was officially confirmed by the French military authorities on May 3, 1918.

2. On May 30, 1918, at 8:40 o'clock, this pilot encountered two enemy monoplace planes at an altitude of 4500 meters above Jaulnoy, and after a sharp engagement, succeeded in bringing one down in flames, and forced the other to retire. This combat and result was officially confirmed by the French military authorities on May 30, 1918.

3. On June 5, 1918, at 10:00 o'clock, while on voluntary patrol with Lieutenant Campbell, two enemy planes were sighted at 5000 meters over Eply. Major Meissner succeeded in forcing one to earth just beyond the German front line trenches, between Eply and Mailly. This plane was subsequently destroyed by American artillery fire. This combat and result was officially confirmed by the American military authorities on June 5, 1918.

4. On June 13, 1918, this pilot, while on voluntary patrol, composed of himself and Lieuts. Taylor and Winslow, encountered an enemy biplace plane over St. Mihiel at an altitude of 5000 meters, which they pursued for about 15 kilometers within the German lines and succeeded in shooting it down in flames over the region of Thiscourt at 8:15 o'clock. This combat and result was officially confirmed by the French military authorities on June 13, 1918.

Major Meissner was also awarded the Croix de Guerre with two palms for his outstanding work as a war pilot.

Upon his return to the United States he served for a brief period with the Air Service Depot at Garden City, L.I., New York, and in the Office of the Director of Military Aeronautics, Washington, D.C. He was honorably discharged from the service on March 25, 1919, and on April 6th of that year was appointed a Major in the Air

(Continued on page 19).

TRAINING ACTIVITIES AT WHEELER FIELD

The year just closed has been one of particularly interesting flight activities at Wheeler Field. For the first time in many years, there has been available sufficient ammunition and bombs to secure a standard of group flying training commensurate with the status of readiness required for air units in the Hawaiian Department. It was also a great boon to training to have available sufficient gas and oil for all required flying training. A judicious economy was exercised throughout the year, but no activity essential to training had to be eliminated due to shortage of equipment. As a result, the 18th Pursuit Group reached a higher standard of training than has ever before been possible.

In the first six months of the current fiscal year the Group has flown a total of 8,098:25 hours. All Air Corps officers who have been on duty with the Group for the entire period since June 30th have accomplished more than 150 hours of pilot time, and all these officers have completed the entire War Department Pilot Proficiency requirements in the first six months of the fiscal year.

Beginning in September, a Group flight of the entire Group has been made to the other islands of the Hawaiian Group once each month. These flights have permitted the majority of the officers in the Group to land at all emergency landing fields from Kauai to Hawaii, inclusive, and have presented an excellent opportunity to get first hand information on aviation operating conditions on all of the islands of the group. These flights also served a useful purpose as a break in the routine flying training over the island of Oahu, and have formed a very acceptable substitute for the popular cross-country flights made in the States which are impractical here. Incident to the November Group flight to Hawaii, all officers on duty with the Group were afforded an opportunity of witnessing the spectacular eruption of the Mauna Loa volcano, which occurred on November 21st while the Group was on that island on a routine training flight. The inter-island flights have permitted all officers of the Group to spend a few pleasant days at the Military Rest Camp at Kilauea.

Pursuit flights to the ceiling of the P-12 airplanes have been conducted by the Pursuit squadrons of this Group on an average of at least once each month this fiscal year. Liquid oxygen has been used and has been entirely satisfactory. The loss of liquid oxygen which occurs in transferring the liquid oxygen from the containers in which it is delivered by the manufacturer to the bottles in the airplanes is still excessive, due to the rapid evaporation incident to a uniformly high temperature in Hawaii.

All pilots present for duty with the Group fired the record gunnery and bombing courses and made average scores considerably higher than those usually obtained in the States. Firing conditions on Oahu are better than are encountered at most mainland Air Corps stations and result in higher gunnery scores during practice and record firing.

The Commanding General of the Hawaiian Department issued orders requiring that all enlisted personnel in the Department should become proficient in the use of small arms. Department orders announced that the Air Corps in Hawaii was armed with the pistol and machine gun. Every enlisted man in the 18th Pursuit Group was armed with the pistol and fired the pistol record course. The amount of pistol ammunition available for practice firing was extremely limited, so that the scores obtained were not entirely satisfactory. However, every man gained considerable experience and would give a reasonably good account of himself with a pistol in any emergency.

In addition to the pistol firing, every enlisted man in the 18th Group fired a special course for record with the ground machine gun. This course was designed to qualify all enlisted men in the defense of the outlying airdromes on which the Group might be stationed and to give the personnel experience in the type of firing that would be required as a defense against raids or sabotage. For this work, instructors were procured from the machine gun companies of the Hawaiian Division and a reasonable standard of proficiency was secured.

Each squadron in the Group trained selected noncommissioned officers in firing anti-aircraft machine guns against hydrogen-filled balloons and towed sleeves. This training was extremely valuable as well as thoroughly enjoyable. Sufficient competition was introduced by organizations to produce the best possible results.

Combat firing exercises for the pilots of the Group were quite diversified and advanced by progressive steps from aerial firing at regulation ground targets until the personnel was able to secure very satisfactory results against shipping. Airplanes to full scale were cut out of paper and pasted to target cloth. These were placed in formation on the ground and used as targets for formation firing until the units were trained to secure good results while firing in formation. Floating targets about the size of the regulation targets were next set adrift and firing conducted against them. As proficiency was secured against these moving water-borne targets, more realistic targets were introduced by constructing a framework to simulate the vital part of a beatle boat, less ends. The results of element, flight and squadron firing in daylight against such targets was determined. Sufficient exercises of this nature were fired to determine the best angle of approach, most effective ranges, etc. Salvage steel drums were next used as floating targets. With very little practice a pilot was soon able to sink a steel drum with .30 caliber firing in less than one minute.

Naturally, .30 caliber firing against towed targets was conducted concurrent with the exercises above described, but this type of firing is not considered satisfactory training, because there is no way to determine where the ammunition is going other than the direct hits secured on the target. Even at medium altitudes, results of combat firing against towed sleeves proved that this method of training is a waste of ammunition. When the firing exercises at towed sleeves were conducted in accordance with the requirements for record firing it was practical to secure a reasonable percentage of hits, but when the conditions were changed to simulate a target such as would be presented in combat, very few hits could be made. The results against towed sleeves were even less satisfactory at 15,000 and 20,000 feet. The firing done at high altitudes against towed sleeves while using oxygen apparatus was not all satisfactory, and it is not believed that the difficulty was due to lack of training or equipment. Plans contemplate additional investigation and combat exercises at high altitudes as soon as combat ammunition becomes available for the current calendar year.

Thirty caliber combat firing was conducted by all officers of the Group against hydrogen-filled balloons, about 24-inches in diameter. These balloons were released from the ground at three-minute intervals. Each pilot was designated to destroy either five or ten of the hydrogen balloons during each combat exercise of this type. No balloons were used below 1000 feet altitude. This type of gunnery was found to be valuable as well as very interesting to the pilots. After the first exercise, very satisfactory results were obtained.

Night firing was conducted against floating targets both adrift and at anchor. These targets were constructed of a light frame covered with target cloth -- the whole being mounted on suitable floats. The size of these targets was 6'x 8' by 4' high. The first combat exercise involved their attack by the illumination of parachute flares. The oscillation of the flares interferes with accurate gunnery but by utilizing flares in pairs and keeping the target continuously illuminated, it is possible to secure very good results by night firing from forward guns. A single Pursuit squadron of eighteen planes can satisfactorily illuminate an aerial target about one hour with parachute flares.

Night firing problems were also conducted, utilizing the illumination of beach defense searchlights. For this type of combat exercise, the same target described above was used, and the illumination was provided by crossing the beams of two shore-based searchlights on the target. The result of the firing with this type of illumination was better than with parachute flares but not enough to compensate for the difficulties incident to the coordination of the activities of the two branches of the service involved.

Night firing combat exercises were also fired, utilizing only the moonlight on a bright moonlight night. These exercises, which were witnessed by the Department Commander, were very interesting and the result obtained very satisfactory.

Incident to the firing of combat exercises against floating targets, it was definitely determined that, given the same number of rounds of ammunition, more hits could be secured on a small target in a shorter period of time with P-12 Pursuit type airplanes, using two forward fixed machine guns, than could be secured with the A-3 type Attack planes with four fixed machine guns. This rather surprising result is attributable to the fact that the convergence of the fire of the fixed guns of the Attack airplanes on a 6'x 8'x 4' target (the size of a vital area of a small boat) results in accurate firing at only one pre-determined range.

The Group was particularly fortunate in being able to secure a considerable number of obsolete, salvaged trucks, which had been surveyed, for use as targets for two combat exercises. These were assumed to be protected by .30 caliber machine guns, effective to 1000 feet altitude. In the combat exercises, the Group employed 25-pound fragmentation bombs, which proved to be very effective against targets of this nature.

During the last month of the calendar year, the Group was able to procure a fifty-foot steel boat, of about eighteen foot beam, which had gone ashore on a reef. The deck and super-structure were all steel. This target was attacked from long range, using .50 caliber machine gun fire from P-12 type airplanes. This type of ammunition was very satisfactory for a steel boat. Numerous rounds penetrated the plates on one side, passed through the ship and out through the plates on the other side. The decks, side area above water, deck house, funnel, and all superstructure was literally full of holes at the termination of the exercise. Plans for combat firing for 1936 contemplate securing salvage quartermaster small boats, to be attacked while adrift by fragmentation bombs and .30 and .50 caliber firing, to determine the effectiveness of each type of ammunition for sinking targets of this general nature.

Another phase of the training work of the Group that may be of interest to other units is that incident to night operations. Only the Attack airplanes in this group are equipped with wing landing lights, and this equipment did not become available for all aircraft until nearly the end of the calendar year. The regular flood lighting system at Wheeler Field is very deficient. Steps have been taken to correct this condition, but the training of the Group was in no way delayed waiting for correction of the permanent field lighting. Each squadron made landings by individual ships and by elements by the use of the standard field lighting sets. This equipment is reasonably satisfactory from a technical view point, but the time required to set it up and put it in operation is too great. Each squadron also made landings with the field lighting system at Haleiwa emergency field, which is a long, narrow, sandy field bounded on one side by pine trees and on the other by the sea.

All squadrons in the Group also made landings at Wheeler Field and at a small emergency field, using for illumination No. 2 tin cans fixed up as smudge lights. This equipment consisted of a standard No. 2 tin can in which a salvaged spiral puttee was placed on edge as a wick. The puttee was saturated in a mixture of oil and gas. Such smudge pots will burn satisfactorily for three or four hours and provide sufficient illumination for outlining the field and for landing thereon. Altogether over 1000 landings were made by the group with this system without an accident of any kind. It is considered very satisfactory for field operations and superior to the standard field lighting system.

During the year the 18th Pursuit Group also participated in the joint Army and Navy Maneuvers, operating both in conjunction with and against naval craft. It is believed that the opportunity for Air Corps training afforded by service in Hawaii is unexcelled at any place in the service. Immediately adjacent to Wheeler Field is the Hawaiian Division, consisting of two Infantry and an Artillery brigade, with the usual special troops. Within ten miles of Wheeler Field are anti-aircraft units, chemical troops, heavy seacoast defenses, a large naval air station, one of the world's most important naval stations, and sufficient shipping activities to permit simulated operations against sea craft at any time that training of this nature is desired. Every opportunity is taken to exploit these facilities to the utmost and, while there are still innumerable training possibilities, the current training scheduled should result in producing a very efficient, well-trained Group capable of giving a good account of itself with the aircraft with which it is equipped.

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Death of Major Meissner

(Continued from page 16)

Reserve. Since the war he has made his home in Birmingham, Alabama, where he was assistant superintendent of the Tennessee Coal, Iron & Railroad Co. In spite of the strenuous duties in connection with his business, he always found time to take part in air activities as a member of the National Guard and Reserve Air organizations. His mature experience, keen judgment, natural leadership, ability and unselfish desire to serve his country played a big part in building up and maintaining a high state of efficiency in the Air Units with which he was associated. At the time of his death he was commanding officer of the 312th Observation Squadron, Organized Reserves, and Fourth Corps Area Representative of the Air Reserve Association.

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CHIEF OF AIR CORPS VISITS KELLY FIELD

On Thursday, February 6th, Kelly Field welcomed Major-General Oscar Westover to the field on his first official visit since being appointed Chief of the Air Corps. "We regret," says the Kelly Field Correspondent, "that he was unable to remain at this post longer than that day."

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FLYING TRAINING AT ADVANCED FLYING SCHOOL

Flying training at the Air Corps Advanced Flying School, Kelly Field, Texas, for the present class of students is almost completed. The week beginning Monday, February 10th, is the last for this class, since it graduates on Saturday, February 15th. In addition to the regular activities, the following events are scheduled: Tuesday, Feb. 11th, a demonstration by a war-strength Infantry battalion at Fort Sam Houston for the graduating students; Wednesday, Feb. 12th, a lecture on the GHQ Air Force by Brig.-General Gerald C. Brant, commanding the Third Wing, and Saturday, February 15th, the long waited for event - graduation.

BOMBING EXPERIMENT IN CONNECTION WITH OF MAUNA LOA, HAWAII

The story of the Army Air Corps bombing of the Manua Loa lava flow on the Island of Hawaii writes still another page in the annals of the Air Corps accomplishments in the promotion of peace-time objectives. The bombing operations were under the command of Lt.-Colonel Asa N. Duncan, Air Corps, commanding the 5th Composite Group, Luke Field, Oahu, T.H., who employed the 23rd and 72nd Bombardment squadrons and a detachment from the 50th Observation squadron and the 4th Observation squadron.

Ten Bombardment, two Amphibians and two Observation airplanes made the trip from Oahu to the Island of Hawaii on December 26, 1935, and established headquarters at the Hilo Airport, Hilo, Hawaii. As soon as one of the Amphibian airplanes could be refueled, it took off for Mauna Loa with Dr. T.A. Jaggar, Volcanologist, U.S. National Park Service, and the pilots of the Bombardment airplanes as passengers, and flew over the lava flow to enable Dr. Jaggar to point out to the pilots the exact location of the targets to be bombed.

These targets were located - the first, at the source of the lava flow on the northeast slope of Mauna Loa; the second, at a spot about one mile below the source, where the lava flow entered two tunnels and flowed underground for about 200 yards. Upon the completion of this spotting flight, preparations were immediately begun for the actual bombing the next morning. Demolition bombs (600-lb.) had been transported to Hilo on the USAT "General Royal T. Frank, together with two Ordnance Department men to fuse same. Prior to this, on December 24th, Colonel Delos C. Emmons, commanding the 18th Composite Wing, had made an examination of the lava flow, in company with Dr. Jaggar; Mr. Wingate, Superintendent of the Hawaiian National Parks; Major Gilchrist, Commanding Officer, Kilauea Military Camp, and Lieut.-Colonel Virgil L. Peterson, Corps of Engineers.

At this time the decision was reached to try the effect of heavy demolition bombs as a means of stopping the flow of lava toward the headwaters of the Wailuku River and the City of Hilo itself. Colonel Emmons reported that there was considerable alarm in the City of Hilo, and public opinion was bringing every pressure to bear to have something attempted in an endeavor to avert the great danger which threatened the city.

The following is a statement of Dr. Jaggar as to the situation with reference to the lava flow, up to the time when the bombing experiment was made:

"The lava of Mauna Loa reached the critical stage of flowing under glassy crust, at the front, December 9 at 8:00 p.m. This liquid increased its spreading out and laking under a shell of solidified lava, below Humuula station December 18.

On the solstice, December 20, there was a sudden advance. This burned grass and forest. The lava lake in the divide suddenly drained eastward, toward Hilo, December 22, at 8 a.m. From a slow rate of one-quarter mile per day northward into the saddle, the glowing flood changed to one mile per day eastward.

This rate of one mile per day was maintained for six days, on a down-grade of 157 feet to the mile, in pasture and forest. It reached a point 13 miles from the terminus of the Kaumana automobile road in Hilo, with the steepness of slope steadily increasing. On an even lava and gas pressure maintained at the source the front would have reached a place near this road on January 9, traveling at the same rate."

Colonel Duncan completed his preparations for the bombing by the evening of December 26th, and everything was in readiness for an early take-off the next morning. The first Bomber took off at 8:45 a.m., December 27th, followed at 20-minute intervals by four other Bombing airplanes. Each plane was loaded with two 600-pound demolition bombs, fused with 1/10 second delay fuse, and with two 300-pound practice bombs to be used as sighting shots. The airplane reached an altitude of 12,000 feet above sea level, or approximately 3500 feet above the targets to be bombed. The bombs were dropped successfully. Upon completing the first mission, the planes returned to Hilo and were re-loaded, as before, and completed a second mission, dropping ten more bombs at the same two targets.

Colonel Duncan states that he personally made an airplane reconnaissance over the targets immediately after the bombing, and the following is quoted from his report:

"It was found that five bombs hit the stream itself, three in the flowing lava of the first target and two directly above the tube of molten lava of the second target. One of these caved in the tunnel. Three other craters were within five feet of the stream, the explosion throwing ashes into the red lava. Two others were within 20 feet of the target. From the sensing of the pilots, seven other bombs fell within fifty feet of the stream."

Colonel Duncan reported Dr. Jaggar state to him that the execution of the bombing mission was superb; that the bombs had been placed exactly where they should have been; and that this aerial bombing of a lava flow was one of the greatest geological experiences in the history of science, the experiment being a complete success.

Dr. Jaggar himself stated as follows:

"On the sixth day, December 27, 9 a.m. to 2 p.m., your officers of the Air Corps, under Colonel Duncan, bombed the source tunnels and released great quantities of lava and gas, and I saw the glowing liquid flung high. This produced a sluiceway of rapid liquid fiery lava at the source itself. This was verified by four observers from the air December 28th at 11 a.m., one of them an experienced pilot for the same area. No such liquid stream was there at 1 p.m., December 26th, when I flew over the course with your officers, to point out the target. This upper flood made clinker lava in new places on the upper slopes.

The Hilo flow immediately slowed down, robbed of its steady pressure, but was very bright that night along its course with overflows, occasioned by the settling of the crusts on liquid lava below, in laked area.

The rate of flow of liquid advance at the fronts, measured on the ground by myself and others under my direction, in detail was as follows:

December 26, 11 a.m., before the bombing, 800 feet per hour.

December 27, 4 p.m., just after the bombing, 150 feet per hour.

December 28, 11 a.m., day after bombing, 40 feet per hour.

December 28, 11 p.m., 33 hours after bombing, front stationary.

The remainder of the activity of frontal flowing was a spilling of remnant lava in the streamways, partly over the sides of the lava fields, partly lengthening the front about a quarter mile. From December 29 to January 2, 8 a.m., each day, the gushing advances of the stiff clinker lava per day were roughly 500, 200, 700 and 200 and 100 feet.

The fume at the summit rift is nearly finished, that at the flow source has stopped, and only three or four molten places in the clinker stream across Puu Oo ranch remain. The damage is relatively small in comparison with what might have been.

I flew over the target December 31, observed 10 or 12 holes which appear to be bomb craters, and from some of them streams had gushed out, now silvery and ropy with congealed skin. The hits were remarkably accurate, and exactly where I wanted them distributed."

The Honolulu ADVERTISER, on January 3rd, stated as follows:

"Madame Pele's latest tantrum of six weeks, which threatened to reach the city of Hilo and which for some time has been considered a distinct menace to this city's water supply, was definitely ended today."

Dr. Jaggar's explanation of the situation which existed relative to the eruption of Mauna Loa at the time when the bombing was accomplished was as follows:

"A lava slag tunnel-and-vent system is in stabilized equilibrium. The physical chemistry of glassy basaltic molt containing gases in solution, particularly hydrogen, involves nice adjustments of pressure.

Any flow from a high source, after streaming so long a time as to threaten a place as distant as Hilo, would be in balanced adjustment, and the bombing would destroy that adjustment and stop the flow. This is what you have proved by your magnificent experiment."

Dr. Jaggar believed that bombing with high explosive bombs would be effective by disturbing the equilibrium of the gas pressure and lava resistance. Dr. Jaggar stated:

"Therefore, the Army, on one day's work has stopped a lava flow, which might have continued indefinitely, and have caused incalculable damage to forest, water resources and city.

What is more important, the work of the bombing squadrons has demonstrated for the first time in history a new method in economic volcanology. And lastly what to me is most important of all, we have shown that cooperation between government departments can add much to the world's store of pure science and humanitarian engineering.

I thank Colonel Emmons and the officers and men of the Air Corps from the bottom of my heart for their achievement. And I thank the War Department on behalf of the Hawaiian Volcano Research Association, of the City of Hilo, and of the County of Hawaii."

Dr. Jaggar believes that the experience gained by this bombing experiment will go far to enable plans to be made to cope with future eruptions of Mauna Loa, which, according to past experience, breaks bounds every four years. Colonel Emmons states that the bombing experience was splendid tactical training for the 18th Composite Wing. Colonel Horace F. Sykes, Adjutant General of the Hawaiian Department, stated the favorable reaction of the community of Hilo to the part played by the Army in stopping the threat to the water supply of Hilo entirely justified the Army's participation.

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DETAILS TO ARMY INDUSTRIAL COLLEGE

Special Orders of the War Department, recently issued, announced the designation of the following-named Air Corps officers as students at the Army Industrial College for the 1936-1937 course:

Major Harrison W. Flickinger, Fairfield Air Depot, Patterson Field, Ohio.

Captain Alonzo M. Drake, Langley Field, Virginia.

Captains Edmund C. Langmead, Alfred J. Lyon, Richard H. Magee and Max F. Schneider, students at the Air Corps Tactical School, Maxwell Field, Ala.

Major Myron M. Wood (Captain), Randolph Field, Texas, on duty with 67th Service Squadron, who is relieved from temporary rank on August 12, 1936. The above-named officers will report to the director of the Industrial College between August 15 and 21, 1936.

WAR DEPT. ORDERS AFFECTING AIR CORPS OFFICERS

CHANGES OF STATION: To Washington, D.C.: Lt.-Col. Charles T. Phillips (Major), 16th Pursuit Group, for duty as member of War Department General Staff. Relieved from temporary rank upon date of departure from Panama; Captain George V. McPike, student at Air Corps Tactical School, Maxwell Field, Ala., for duty in Office of Assistant Secretary of War, July 1, 1936; Lieut.-Colonel Harrison H.C. Richards, Kelly Field, Texas, for duty in Office of the Chief of the Air Corps.

To Randolph Field, Texas: Major Edwin B.Lyon, General Staff, Washington, for duty as Assistant Commandant, Primary Flying School; Major Warner B. Gates from Panama.

To Kelly Field, Texas: Captain August W. Kissner (1st Lt.) 4th Composite Group. Relieved from temporary rank upon date of departure from Philippines.

To Chanute Field, Ill.: Major Ray H. Clark, 19th Pursuit Squadron. Relieved from temporary rank upon date of departure from Hawaii.

To March Field, Calif.: 1st Lieut. Richard C. Hutchinson from Hawaii.

To Bolling Field, D.C.: Captain Harold R. Rivers, from Philippines.

To Mitchel Field, N.Y.: Major James W. Hammond (Capt.) 66th Service Squadron. Relieved from temporary rank upon date of departure from Philippines.

To Langley Field, Va.: Captain Ward J. Davies (1st Lt.) 6th Composite Group. Relieved from temporary rank upon departure from Panama.

To Fort Benning, Ga.: 1st Lt. Thomas D. Ferguson, from Hawaii, for duty with Flight B, 16th Observation Squadron.

To San Diego, Calif.: 1st Lieut. Walter W. Gross, Station Complement, Moffett Field,Calif. for duty with Organized Reserves, 9th Corps Area.

To Fort George H. Wright, Wash.: 2nd Lieut. George B. O'Connor, Air Corps Training Center, Randolph Field, for duty with 4th Infantry.

To Philippines: 1st Lieut. Harold L. Mace, Flight B, 16th Obs. Squadron, Fort Benning,Ga.; 1st Lieuts. Thomas P. Lynch and Samuel W. Van Meter, from Randolph Field, Texas.

TRANSFER: Captain Richard K. LeBrou to Finance Dept., January 29, 1936.

Major Arthur B. McDaniel and Captain Robert G. Breene, Air Corps, now on duty as students at the Command and General Staff School, Fort Leavenworth, Kansas, are under orders to report to the Commandant of that School for duty as instructors, effective August 1, 1936.

DETAILS TO THE AIR CORPS ENGINEERING SCHOOL

Ten Air Corps officers are under orders to proceed to Wright Field, Dayton, Ohio, in August, 1936, and report to the Commandant of the Air Corps Engineering School for duty as students in the 1936-1937 course, viz:

Captain Eugene H. Beebe (1st Lieut.), March Field, Calif.

Captain Thomas B. McDonald (1st Lieut.), Barksdale Field, La.

Captain Donald J. Keirn (1st Lt.) and Captain John G. Moore, Hamilton Field, Calif.

Captain Raymond E. Culbertson, Randolph Field, Texas.

1st Lieut. Donald L. Putt, Wright Field, O.

1st Lieut. Howard G. Bunker, Patterson Field,O.

1st Lieuts. Louis E. Massie, Samuel O.Redetzke, and Herbert H. Tellman, students at the University of Michigan, Ann Arbor, Mich.

Captain Beebe is relieved from temporary rank, effective June 30; Captain Keirn, July 1, and Captain McDonald, July 29, 1936.

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FRANCE LEADS IN WORLD'S AERONAUTICAL RECORDS

The Bulletin of the Federation Aeronautique Internationale for January, 1936, lists a total of 117 world's aeronautical records, as of January 1, 1936. France is credited with 37 of these records, followed by the United States with 36; Italy, 27; Germany and Poland, 8 each, and Great Britain, 1.

Of the 36 records held by the United States, 26 are credited to civilian pilots, 5 to the Army Air Corps and five to the Navy.

The team of Edwin Musick, Boris Sergievsky and Charles A. Lindbergh holds five records; four records each are credited to D.W. Tomlinson, former Navy pilot, and Benjamin King, of Washington, D.C. On three of the flights made by Tomlinson, he was accompanied by J.S. Bartles as co-pilot, and on the fourth by H.B. Snead. Three records are held by Major-General Frank M. Andrews, Air Corps, commanding the GHQ Air Force. Two records each are credited to the free balloon team of E.J. Hill and A.C. Schlosser, to Lieut. Richard L. Burke, U.S.N.; to Lieut.-Commander Knefler McGinnis, accompanied by Lieut. J.K. Averill and Aviation Pilot T.F. Wilkinson, all of the U.S. Navy; to Boris Sergievsky (one solo and one accompanied by R.B. Quick); and to Harry Richman.

One record each is credited to Captains Albert W. Stevens and Orvil A. Anderson, Air Corps; Captain Hawthorne C. Gray, Air Corps (deceased); Colonel Roscoe Turner, Howard Hughes; A.C.Chester; Lieut. A. Soucek, U.S.Navy; Major Alexander P. de Seversky; Mrs. Amelia Earhart and Miss Helen MacCloskey, and S.J. Wittman.

The altitude record of the Stratosphere Flight of Captains Stevens and Anderson, as homologated by the Federation Aeronautique Internationale, is 22,066 meters, or 72,395 feet.

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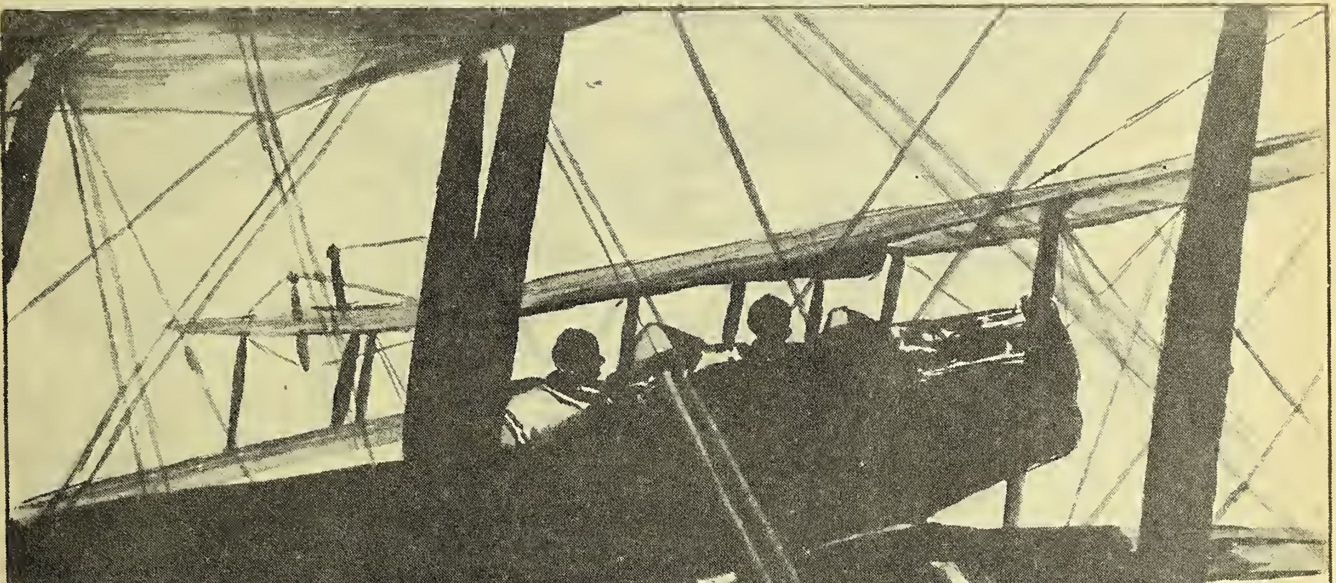
Individual and formation altitude performance flights were accomplished by the 35th Pursuit Squadron, Langley Field, Va., during the week of January 20-25. Formations were operated above 20,000 feet to familiarize the pilots with high altitude conditions and the use of oxygen equipment. Flying Cadet Walter J. Garrison, piloting a P-6E airplane, made the highest individual flight.

During the calendar year 1935 there were 347 days on which airplanes could and did operate from Randolph Field, Texas. This was an increase of fourteen days as compared with the record of the preceding year.

Air Corps
News Letter

Issued by the office of the Chief of the Air Corps
War Department, Washington, D.C.

Auld Lang Syne



Vol XIX March 1, 1936 No. 5

VOL. XIX AIR CORPS NEWS LETTER NO. 5.
Information Division
Air Corps
March 1, 1936
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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NEW GROUP OF PILOTS FOR THE ARMY AIR CORPS

By the Kelly Field Correspondent

Class No. 24-B, consisting of two foreign officers, five Regular Army officers, and 45 Flying Cadets, was graduated from the Air Corps Advanced Flying School, Kelly Field, Texas, on February 15, 1936. Major-General Frank M. Andrews, commanding the GHQ Air Force, was invited to Kelly Field to receive the aerial review, make the graduation address to the students, and present them their diplomas. After being delayed on account of unfavorable weather, General Andrews arrived at Randolph Field the night of February 14th.

Upon his arrival at Kelly Field for graduation exercises, General Andrews was welcomed by a number of the officers now stationed here who had the pleasure of serving under him when he was in command of the Air Corps Advanced Flying School. Other officers in the reviewing party were Brigadier-General James E. Chaney, Commanding the Air Corps Training Center; Colonel Jacob E. Fickel, Commanding the Air Corps Advanced Flying School; Lieut.-Colonel H.H.C. Richards, Assistant Commandant, Air Corps Advanced Flying School; Colonel Henry W. Harms, Commanding the Air Corps Primary Flying School; Lieut.-Colonel Lloyd N. Keesling, Assistant Commandant. Air Corps Primary Flying School; Major P.L. Williams, Director of Flying Training, Air Corps Training Center, and Major Charles H. Dowman, Director of Ground Training, Air Corps Training Center. The reviewing party took up a position in front of Post Operations Office, facing south on the edge of the runway.

The Flying Cadets from Randolph Field, on both primary and basic stages, were transported to Kelly Field in trucks and were formed immediately in rear of the reviewing party.

The 15th Field Artillery Drum and Bugle Corps, with Lieut. P.H. Pope in charge, was formed on the right of the line of Randolph Field Cadets. This drum and bugle corps was loaned for the occasion by Colonel F.W. Honeycutt, commanding the 15th Field Artillery at Fort Sam Houston, Texas.

The students from the graduating class climbed into the cockpits of airplanes to which they were assigned for the review at 9:00 a.m.; taxied onto the airdrome at 9:05, and took off at 9:10. The Bombardment flight, led by Lieut. Burlingame and consisting of nine B-3's, B-4's and B-5 airplanes, passed the reviewing stand at exactly 9:30. They were followed by the Observation flight, led by Captain James B. Jordan, and consisting of nine O-25 and O-19 airplanes. The Attack Section, led by Cadet Brown and consisting of ten A-3B airplanes, made up the third element of the review; and the Pursuit flight, led by Cadet Bruce and consisting of 15 P-12 airplanes, was the fourth and last element to pass the reviewing stand.

After the airplanes that had participated in the review returned to the airdrome, the Cadets from Randolph Field marched out to the runway in front of Post Operations, where they were formed and presented to General Andrews and his party for inspection. Following this inspection, a competitive drill by the companies of Cadets was held, consisting of the following events:

1st Event - (10 points possible). Establish a line and align the company; time limit, one minute.

2nd Event - (50 points possible). Manual of Arms; time limit, three minutes.

3rd Event - (10 points possible). Close on right platoon; time limit, one minute.

4th Event - (20 points possible). Extend on rear platoon on right into line and halt; time limit, two minutes.

5th Event - (40 points possible). Squads right, column right - halt; forward march and halt; time limit, two minutes.

6th Event - (50 points possible). Platoons right front into line and halt; time limit, two minutes.

7th Event - (40 points possible). Squads right about - squads left about - close on leading platoon and halt; time limit, two minutes.

8th Event - (30 points possible). Column of squads leading platoon - squads left; squads left and halt; time limit, three minutes.

Inspection - (25 points possible).

Pass in review. Best line while passing in review - (25 points possible).

Company A won the competitive drill with a total score of 285 out of a possible 350 points. B Company was only three points behind with a score of 282. Judges for this competitive drill were Captain John M. Weikert, Commandant of Cadets at Randolph Field, and his assistant, Lieut.

Arthur W. Meehan. The music furnished by the Drum and Bugle Corps of the 15th Field Artillery materially added to the efficiency and effectiveness of this drill.

Immediately following the competitive drill, the Cadets marched to an area west of the Operations Building, which had been reserved for them, and stacked their rifles before marching to the Theatre for the graduation exercises.

As the cadets left the flying line, one airplane of each type used in training students at the Air Corps Advanced Flying School was taxied down in front of Post Operations Building for inspection by the public. Suspended from a prominent point of each airplane was a sign giving a brief description thereof and its performance.

Graduation exercises were held at 10:45 a.m. in the Post Theatre, which was filled to capacity by relatives and friends of the graduating class and members of the Army and civilians from this vicinity. After the invocation by Chaplain E.R. Martin, Colonel Jacob E. Fickel, as Commandant of the School, introduced General Andrews as the principal speaker. General Andrews made a very interesting and timely address to the class and presented an accurate and interesting picture of what they could expect during their first years of service. His remarks did much to encourage the students, particularly the Cadets who have been somewhat disturbed concerning their uncertain status in the Air Corps after graduation from the School. Following his address, General Andrews presented each student with his diploma and congratulated them upon having successfully completed the course of training. Chaplain Martin's benediction brought the exercises to a close.

This class reported to Kelly Field for training on October 15, 1935, and at that time consisted of six Regular Army officers; two foreign officers, and 50 Flying Cadets, a total of 58 students. Six of those who reported for training did not graduate with this class. One Regular Army officer and one Flying Cadet were eliminated on account of insufficient progress made in flying; two Cadets were held over for instruction in the class to follow, due to loss of time through illness; one Cadet was discharged for physical disability and one Cadet was killed in an airplane accident. This resulted in graduating 52 out of 58, or 89.6%.

The class completed all of its prescribed training in spite of the shortage of airplanes and officers at this station, and it is believed that the graduates will be a real credit to the service. In view of the high standard required for candidates to begin the course and the exacting accomplishment required during the training period, each student is to be congratulated upon his successful completion of the course. This is especially true in the case of the two foreign officers who had the additional difficulty of another language to master. They are Captain Jose C. de Silva, of the Brazilian Air Corps, and First Lieut. Jose Vergara Ahumada, of the Mexican Air Corps.

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PERSONNEL OF GRADUATING CLASS NO. 24-B

Officers, Regular Army

Capt. James B. Jordan, A.C.	Bolivar, Mo.
2d Lt. Jerome E. Blair, II, Cav.	Norfolk, Va.
2d Lt. Paul Burlingame, Jr., Inf.	Louisville, Ky.
2d Lt. Stanley J. Donovan, Inf.	Portland, Me.
2d Lt. Edward Flanick, Cav.	Holliday's Cove, W.Va.

At this writing, orders assigning these officers to Air Corps stations have not yet been issued.

Foreign Officers

1st Lt. Jose G.V. Ahumada	Mexico
Captain Jose C. Muricy	Brazil

Flying Cadets

Orders have been issued assigning Flying Cadet graduates to Air Corps stations, as follows:

Attack Pilots

To Langley Field, Va.:	
John H. Eakin	Hudson, O.
Earl Willoughby	El Centro, Calif.

To Barksdale Field, La.:	
David Wade	Minden, La.
Edwin H. Hawes	Seedrift, Texas.
Kermit D. Stevens	Portland, Ore.
Ryder W. Finn	McCoy, Ore.

To March Field, Calif.:	
Nelson T. Brown	Tulare, Calif.
Roger M. Roberts, Jr.	Menlo Park, Calif.
Elbert D. Reynolds	Beaumont, Texas.
John S. Hardy	Logansport, La.

Bombardment Pilots

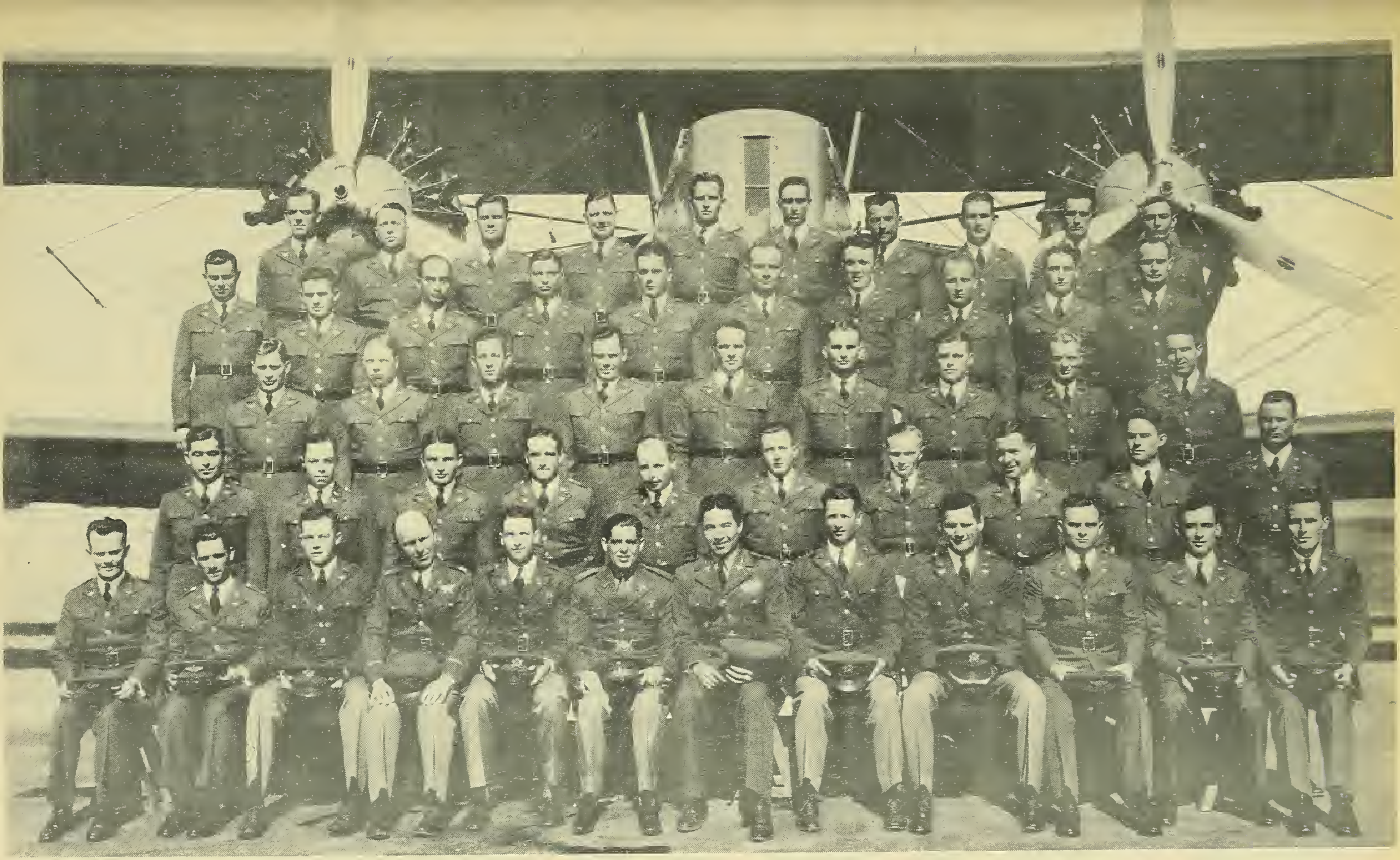
To Langley Field, Va.:	
Kenneth A. Cavenah	Helper, Utah
Clarence K. Longacre	Williamsport, Pa.
Lowell F. Johnson	Lafayette, Ind.
Chris H.W. Rueter	Waco, Texas
Kenneth H. Gibson	Salt Lake City, Utah

To Mitchel Field, N.Y.:	
Robert C. Sexton	Los Cruces, N.M.
Harry L. Donicht	Glencoe, Minn.
Kenneth G. Ames	Bridgton, Me.
Dalene E. Bailey	Spokane, Wash.
Howard W. Helfert	Sioux Falls, S.D.
William E. Creer	Spanish Forks, Utah
Robert L. Olinger	Angola, Ind.
Willard E. Sherman	Mt. Vernon, S.D.
Charles E. Lancaster, Jr.	Lexington, Ky.
David H. Walker	Sacramento, Calif.

Observation Pilots

To Mitchel Field, N.Y.:	
Ernest F. Wackwitz, Jr.	Rockville Center, N.Y.
Audrin R. Walker	University, Ala.
Robert F. Burnham	Battle Creek, Mich.

To Brooks Field, Texas:	
Beverly H. Warren	Plainview, Texas
Bela A. Harcos	Los Angeles, Calif.
John D. Whitt	Austin, Texas
Robert W. Ryder	Minneapolis, Minn.



CLASS 24-B, GRADUATED FEBRUARY 15, 1936

TOP ROW - Left to Right:	Flying Cadets: Brown, Reynolds, Wood, Eakin, Wade, Harcos, Helfort, Longacre, Cavenah, Young.
2nd ROW - Left to Right:	Flying Cadets: Warren, Fariss, Marion, Kellogg, Kramer, Reuter, Ryder, Burnham, Johnson, Gibson.
3rd ROW - Left to Right:	Flying Cadets: Sherman, Ames, Roberts, Hawes, Hayes, Hardy, Bailey, Creer, Wackwitz.
4th ROW - Left to Right:	Flying Cadets: Willoughby, Olinger, Sexton, Stevens, Johnston, Camp, Donicht, Lessig, Walker, A. R., Whitt.
BOTTOM ROW - Left to Right:	Flying Cadets: Walker, D. H., Cecil; Lt. Donovan, Capt. Jordan, Lt. Blair, Capt. Muricy, Brazilian Army, Lt. Ahumada, Mexican Army, Lt. Planick, Lt. Burlingame, Flying Cadets: Campbell, Finn, Bruce.

NOTE:

Pursuit Pilots

To Barksdale Field, La.:

Bertrand B. Bruce	Los Angeles, Calif.
Harry B. Young	Birmingham, Ala.
Arch G. Campbell	Fort Worth, Texas
Chester W. Cecil, Jr.	Abilene, Texas
Ralph M. Kellogg	Dover, Mass.
Robert C. Wood	Haynesville, La.
Wolcott A. Fariss	Sacramento, Calif.
Cecil P. Lessig	Salina, Kans.
Wilbur D. Camp	Arlington, Texas
William L. Hayes, Jr.	Sacramento, Calif.

To Selfridge Field, Mich.:

Charles E. Kramer	Fulton, Ky.
Charles E. Marion	Detroit, Mich.
Robert L. Johnston	Bellevue, Pa.

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PROGRAM OF INSTRUCTION
for the class commencing October 15, 1935,
at the Air Corps Advanced Flying School.

I - SCOPE:

To qualify graduates of the Air Corps Primary Flying School in the basic duties common to junior officers of the Air Corps in the special duties of Attack, Bombardment, Pursuit, or Observation Aviation.

II - DURATION:

October 15, 1935, to March 1, 1936 ($4\frac{1}{2}$ months).

III - PROGRAM:

	Approximate Hours Flying
1. Flying:	
a. Transition to Attack, Bombardment, Pursuit and Observation types of service airplanes	15
b. Specialized flying training in Attack, Bombardment, Pursuit or Observation Aviation	56
c. Instrument flying, under the hood. This includes approximately 10 hours practice in the use of the Department of Commerce Radio Aids to Navigation and a check flight as required by Circular 50-1, OCAC.	13
d. Instrument Flying, other than under the hood	5
e. Night flying (local)	3
f. Day avigation flying	28
gg. Night avigation flying	15
Total	135

	Hours
2. Infantry Missions (Liaison and Contact): To include instruction in the various types of missions, communications methods and procedure in cooperation with ground troops and all work required of divisional aviation.	10
3. Cooperation with Artillery: To include instruction in the description of artillery materiel, artillery terms and definitions, methods of artillery fire, Air Corps communication methods and procedure in cooperation with artillery; communications, blackboard, miniature range, puff target and actual Field Artillery firing problems.	24
4. Observation Aviation: To include instruction in the history, object, organization, training, operation, various types of reconnaissance, radio, and photographic missions, tactical employment, communication methods and cooperation with other branches of the Service.	8
5. Bombardment Aviation: To include instruction in the history, missions, employment and training, and tactics	3
6. Pursuit Aviation: To include instruction in the history of development, the Pursuit airplane, factors influencing combat, the Pursuit pilot, individual tactics, the Pursuit flight, flight formation, flight tactics, the Pursuit squadron, squadron tactics, the Pursuit group, group tactics, the wing, principles of employment and administration of units.	3
7. Attack Aviation: To include instruction in the history, principles of employment, training, armament, offensive and defensive missions, and tactics	3
8. Signal Communications: To include instruction in the operation of airplane radio transmitters and receivers, various types of airplane radio telegraph and radio telephone communication procedure, and use of radio beacons in navigation	12
9. Reconnaissance: To include instruction in the different types of missions, orders affecting same, types of reconnaissance, reports and cooperation with ground troops	8
10. Bombs and Explosives: To include instruction in the nomenclature and handling of all explosives and bombs used by the Air Corps.	4
11. Bomb Racks: To include instruction in the operation, handling and maintenance of bomb racks used by the Air Corps.	3
12. Bomb Sights: To include instruction in the operation, handling and maintenance of bomb sights used by the Air Corps	6
13. Aerial Photography: To include instruction in the types and uses of aerial photography, aerial cameras, their accessories and methods of operation and installation.	4
14. Combat Orders: To include instruction in the interpretation and composition of field orders, squadron orders and flight orders.	9
15. Military Organization: To include a general discussion of the military organization of the Army with special emphasis on the organization of the Air Corps units.	4
16. Squadron Duties of Junior Officers: To include instruction in the duties and responsibilities of junior officers in a squadron, with special emphasis on the duties of the squadron adjutant, engineer, supply and mess officer.	8
17. Code Practice: To develop all students to send and	

	Hours
receive 18 words a minute in the Air Fire-Control Code, the Air-Ground Liaison Code and the Radio Service Code.	20
18. War Planning Principles: To include the principles, objectives and general methods prescribed for industrial mobilization	2
19. Trap Shooting: Each student to fire approximately 200 rounds	8
Total	139

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COMMISSIONS FOR FLYING CADETS

The following-named Flying Cadets of the Army Air Corps, who graduated from the Advanced Flying School, Kelly Field, Texas, in February, 1935, and who completed their additional year of training with an Air Corps tactical unit on February 29, 1936, have been recommended by the Chief of the Air Corps for commission as second lieutenants in the Air Reserve as of this date, and for extended active duty with Air Corps tactical units as Reserve officers, effective March 1, 1936, viz:

Barksdale Field, La.:	
John Francis Guilmartin	Midway, Ala.
James Crawfors McGehee	Birmingham, Ala.
Frank Beard Scott	Little Rock, Ark.

Langley Field, Va.	
Frank J. Bennett	Gretna, Va.
Stetson M. Brown	St. Johnsbury, Vt.
Gerald M. Cherymisin	Alta Loma, Calif.
Carlos J. Cochrane	Topeka, Kans.
John L. DuFrane, Jr.	Oakland, Calif.
Clarence T. Edwinson	Topeka, Kans.
Marshall A. Elkins	Waco, Texas
Anthony Gail Eubanks	Corpus Christi, Texas
Walter J. Garrison	Croset, Va.
Lawrence W. Greenbank	Washington, D.C.
John Hal Jeffus	Plainview, Texas
Willis Sherwood Marvin	Riverside, Calif.
John B. Montgomery	Spartanburg, S.C.
Arthur H. Rogers	Raleigh, N.C.
Raymond V. Schwanbeck	Ashfork, Ariz.
Joseph Abbott Thomas	Hollywood, Calif.
Joseph Harold Wilson	Payson, Utah

Hamilton Field, Calif.:	
Arthur V. Jones, Jr.	Los Angeles, Calif.
William Q. Rankin	Gulfport, Miss.
Lloyd A. Walker, Jr.	Los Angeles, Calif.

Brooks Field, Texas:	
Thomas M. Bartley, Jr.	Waco, Texas
George S. Brewer	Arcadia, La.
John Beaumont Cornett	Waco, Texas
William Irvin Fernald	Tarpon Springs, Fla.
Frank V. Haynes	Clyde, N.C.
Norman Lewis Peterson	San Antonio, Texas

March Field, Calif.:	
Lee Bannerman Coats	Los Angeles, Calif.
Boyd Hubbard, Jr.	Adair, Iowa
David B. Kuhn	Texarkana, Ark.
Lorris William Moomaw	Santa Anna, Calif.
Podge M. Reed	Moody, Texas
Frederick Wm. West, Jr.	San Francisco, Calif.

Mitchel Field, L.I., New York:	
Robert Byron McClellan	Baton Rouge, La.
Francis Henry MacDuff	Brockton, Mass.
Arthur Y. Snell	Brockton, Mass.

Selfridge Field, Mich.:	
George S. Buchanan	Palo Alto, Calif.
John S. Chennault	Montgomery, Ala.
Frank L. Higgs	Pullman, Wash.
William W. Jarrell, Jr.	Thomasville, Ga.
Baskin R. Lawrence, Jr.	Seneca, S.C.
Thomas E. Moore	Collettsville, N.C.
Lawrence R. Olmsted, Jr.	Brownsville, Texas
Lucion N. Powell	Carbon Hill, Ala.
Frank E. Rouse	Columbus, Ohio

Hamilton Field, Calif.:	
Jess A. Smith	Woodrow, Colo.

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SAN ANTONIO DEPOT CHECKS UP PANAMA FLIGHT PLANES

When the mass flight of 10 Bombardment and 13 Pursuit planes, Langley Field, Va., to the Panama Canal Zone, arrived at Randolph Field, Texas, on February 14th, the Bombers were turned over to the San Antonio Air Depot for check-up and conditioning for the remainder of the flight. The Depot bent its utmost effort to the task, working continuously day and night on 8-hour shifts, and on the evening of February 20th the planes were delivered back to Randolph Field.

Lieut.-Colonel J.H. Houghton, the flight commander, and other officers of the flight were visitors at the Depot during this activity.

In the preparation of these Bombers, the Wright Aeronautical Corporation sent its service representative, Mr. Sonner, to the Depot to assist in every way possible in the work.

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OAK LEAF CLUSTERS TO CAPTS. STEVENS AND ANDERSON

Announcement was recently made by the War Department of the award of the Oak-Leaf Cluster to the Distinguished Flying Cross to Captains Albert W. Stevens and Orvil A. Anderson, Air Corps, the citations accompanying same being as follows:

"ALBERT W. STEVENS, Captain, Air Corps, United States Army.

For extraordinary achievement as Commander and Scientific Observer of the National Geographic Society-Army Air Corps Stratosphere Balloon Flight which started from the vicinity of Rapid City, South Dakota, on November 11, 1935, ascended to the greatest height ever attained by man, and successfully landed near White Lake, South Dakota, with the scientific equipment and the valuable records it contained intact. Captain Stevens displayed a steadfastness of purpose, a thoroughness of preparation and professional attainments of the highest character in the execution of this flight. To his scientific knowledge may be attributed in large measure the acquisition of valuable data regarding the realm of the stratosphere."

"ORVIL A. ANDERSON, Captain, Air Corps, United States Army.

For extraordinary achievement as pilot and assistant scientific observer of the National Geographic Society-Army Air Corps Stratosphere Balloon Flight which started from the vicinity of Rapid City, South Dakota, on November 11, 1935, and successfully landed near White Lake, South Dakota, with the scientific equipment and valuable records it contained intact. In performing

(Continued on page 5.).

DETAILS TO AIR CORPS TECHNICAL SCHOOL

Special Orders of the War Department, recently issued, announced the detail of a total of 24 Air Corps officers as students to undergo courses of instruction at the Air Corps Technical School at Chanute Field, Rantoul, Ill. Eleven officers are scheduled to pursue the Airplane Maintenance Engineering-Armament course; ten, the Communications course and three will busy themselves with the Photographic course. These officers are under orders to report to the Commandant of the Air Corps Technical School not later than August 20, 1936, to begin their school work.

The officers assigned to the different courses are listed below, as follows:

Airplane Maintenance Engineering-Armament

Captain Morris J. Lee (1st Lieut.) 77th Pursuit Squadron, Barksdale Field, La.
Captain William P. Sloan (1st Lieut.) 13th Attack Squadron, Barksdale Field, La.
Captain Sory Smith (1st Lieut.) 55th Pursuit Squadron, Barksdale Field, La.
Captain Howard Moore (1st Lieut.) Operations Officer, Station Complement, Mitchel Field.
Captain Norman R. Burnett (1st Lieut.) 57th Service Squadron, Selfridge Field, Mich.
Captain Morley F. Slaght (1st Lieut.) 56th Service Squadron, Selfridge Field, Mich.
Captain Richard A. Grussendorf (1st Lt.) 37th Attack Squadron, Langley Field, Va.
1st Lieut. John C. Covington, Fort Bragg, N.C.
1st Lieut. Lester L.H. Kunish, Barksdale Field, La.
1st Lieut. Tom W. Scott, Randolph Field, Texas
1st Lieut. Hansford W. Pennington, Chanute Field, Ill.

Communications

Captain F. Edgar Cheatle (1st Lieut.) 99th Bombardment Squadron, Mitchel Field, N.Y.
Captain George F. Moody (1st Lieut.) 1st Bombardment Squadron, Mitchel Field, N.Y.
Captain Thomas L. Bryan, Jr. (1st Lieut.) 40th Attack Squadron, Kelly Field, Texas.
Captain Edward H. Underhill (1st Lieut.) 40th Attack Squadron, Kelly Field, Texas.
Captain Walter E. Todd (1st Lieut.) 27th Pursuit Squadron, Selfridge Field, Mich.
1st Lieut. David H. Kennedy, Langley Field.
1st Lieut. Berkeley E. Nelson, Langley Field.
1st Lieut. Dean C. Strother, Barksdale Field.
1st Lieut. Nicholas E. Powell, Chanute Field.
1st Lieut. Edward S. Allee (2nd Lt.) 17th Pursuit Squadron, Langley Field, Va.

Photographic

1st Lieut. Andrew Meulenberg, Scott Field.
1st Lieut. Henry K. Mooney, Barksdale Field.
1st Lieut. William E. Karnes, Chanute Field.

Of the above-named officers holding temporary increased rank, Captains Bryan and Underhill are relieved of such rank, effective August 16, 1936; Captains Lee, Sloan and Smith, August 17th; and the remaining officers, August 18th.

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NEW INSTRUCTORS AT AIR CORPS TACTICAL SCHOOL

Under Special Orders of the War Department, recently issued, six Air Corps officers now attending the Command and General Staff School at Fort Leavenworth, Kansas, and one attending the Air Corps Tactical School at Maxwell Field, Ala., are directed to report, upon the completion of their present course of instruction, to the Commandant of the Air Corps Tactical School for duty on the staff and faculty, viz:

Command and General Staff School students:

Major Donald Wilson
Captain Roland Birnn
Captain Byron T. Burt, Jr.
Captain Frederick von H. Kimble
Captain Ralph F. Stearley
Captain Hoyt S. Vandenberg

Air Corps Tactical School student:

Captain James E. Parker

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Oak Leaf Clusters to Capts. Stevens and Anderson

(Continued from Page 4)

this flight, Captain Anderson distinguished himself by extraordinary achievement, coolness, and confidence, in piloting the largest and the most heavily equipped balloon ever flown to a greater height than had previously been attained by man."

Captains Stevens and Anderson were awarded the Distinguished Flying Cross in October, 1934, for their participation in the First National Geographic Society-Army Air Corps Stratosphere Balloon Flight, which took off from the vicinity of Rapid City, S.D., on July 28, 1934.

The award of the Oak-Leaf Cluster takes the place of a second award of the Distinguished Flying Cross.

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FOOD DROPPED TO MAROONED ISLAND INHABITANTS

The 49th Bombardment Squadron, Langley Field, Va., on February 10th and 11th, dropped packages of food to the inhabitants of Tangier and Smith Islands who were in danger of starving, due to heavy ice floes in the Chesapeake Bay which prevented any assistance from reaching them by water. Five trips were made, and a total of approximately 5,000 pounds of food was dropped. Captain Harvey, Lieut. Kilpatrick and Flying Cadet Cochrane were the pilots.

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The artistic cover design featuring this issue of the NEWS LETTER was drawn by Miss Jane Wyatt, 15-year old daughter of the late Lieut. John A. Wyatt, Air Corps, and niece of Captain James F. Powell, Air Corps, now stationed at Randolph Field, Texas. Lieut. Wyatt lost his life in an airplane accident July 23, 1925, while flying between Luke and Wheeler Fields, Hawaii.

Our cordial thanks are extended to Miss Wyatt, and it is hoped that she will be a frequent contributor of cover designs for the NEWS LETTER.

THE MULTIPLEX AERO PROJECTOR

Aerial mapping and surveying is but one of several important activities which has resulted from the development of aircraft. As adjuncts to the multilens aerial camera, which photographs territory lying within range as the airplane flies, are other necessary items of equipment, such as the transforming printer and the Multiplex Aero Projector. The latter equipment, which has been under test at Wright Field, consists of several projection cameras mounted on a horizontal bar. These cameras are duplicates on a smaller scale of the aerial camera used to take the photographs. They may be shifted along the bar to correspond to the movement of the airplane during the interval between exposures. They may be raised and lowered to correspond to changes in altitude of the plane in flight, and they may be tipped and tilted to correct for the lack of horizontalization of the taking camera at the instant of exposure. In short, they may be shifted in such a manner as to duplicate the camera stations in the air from which the aerial photographs were taken.

Within these small projecting cameras are placed small diapositives which are reductions of the original negatives of the aerial photographs. Diapositives are positives printed on glass and are so called to distinguish them from glass-plate negatives.

Behind the lens of these cameras is a light and a light condenser similar to that of an ordinary projecting lantern. The diapositives are projected onto the table beneath the cameras and, when the aerial camera stations have been duplicated along the horizontal bar, the intersection of the rays of light from the various cameras reproduces a model of the surface of the earth covered by the photographs.

Inasmuch as there is no actual physical model, but only a spatial one, it is necessary to resort to another means for viewing the points of intersection of the rays of light emanating from the small projecting cameras. This is obtained by inserting colored filters in the cameras, thereby causing alternate cameras to project red and blue-green images. Thus projector No. 1 may project a red image; No. 2, a blue-green; No. 3, a red image, and so on. Since the areas projected overlap on the board as they did in nature, it is necessary to view them through glasses of colors complimentary to the colors in which the images are projected. Colored spectacles are provided for this purpose. One eye of the spectacle is red, the other is blue-green, corresponding to the colors in which the images are projected, and in which the spatial model of the earth is built up. When this has been accomplished, a complete model of the earth covered by the photograph may be viewed in the machine as shown in the second photograph.

Since it is desired to compile an accurate map from this spatial model, a drawing mechanism and a means of measuring vertical heights must be introduced. This is accomplished in a single drawing table shown in the photograph of the Multiplex machine. The index mark is a small pin point of light in the center of the opaque table. It may be caused to move up and down by a vertical screw in the back of the stand. The distance this small table (and the pin point of light) is raised and lowered is a function of true differences in elevation on the earth's surface and may be converted into feet by a simple transformation.

The opaque table may be raised and lowered within the stereoscopic model, and when viewed through the colored glasses the points of intersection of the rays of light from the projecting cameras may be readily distinguished as the surface of the stereoscopic model.

With a small amount of practice, it is possible for an operator to set the index mark at a given elevation, bring it into contact with the ground (that is, the surface of the stereoscopic model) and draw contours. It is equally simple to draw planimetric detail.

With these two instruments, the Corps of Engineers working at Wright Field is able definitely to speed up the producing of topographic maps of any required territory.

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LECTURES FOR NATIONAL GUARD AIRMEN

Hereafter a field order will mean far more than a mere bunch of words typed on a piece of paper to officers of the 41st Division Aviation, Washington National Guard, Felts Field, Spokane.

Officers in the squadron will also have a clearer conception of radio communications, artillery fire adjustment and the duties of Observation aviation. During January, lectures in the actual writing of a field order were given by Captain Lawrence Sherman, who at the end of the month gave a written examination on questions approved by Major Robin A. Day, Commander and Instructor of the squadron. Every officer knew the reasons for five paragraphs, what each contained, the standard abbreviations, what should and what should not be punctuated.

A month of lectures is being given by Lieut. Charles O. Holter, Radio Officer, on the use of the new type radios. Installation of the new ground station set, which arrived recently, has not been possible because of some missing connections. The radio course includes the various methods of adjusting fire for the Field Artillery.

At the conclusion of each Sunday lecture, pilot-observer teams are sent out to conduct puff target adjustments. In March, the 41st Division Aviation will start its schedule of weekly communication missions with the 148th Field Artillery of Coeur d'Alene, Idaho.

Review of Observation aviation text has been found advisable with the receipt of the new text on Observation aviation. Captain Robert W. Owen is lecturing on the new text, with an examination to follow at the end of February.

With the advent of spring weather, the subject of aerial photography will be specialized upon by Lieut. Hillford R. Wallace, Photographic Officer. It is proposed that every pilot and observer shall photograph vertical strips before going to the annual encampment at Fort Lewis, Washington, in June.

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WEATHER FLIGHTS BY SCOTT FIELD PILOTS

The 15th Observation Squadron has been making the U.S. Weather Bureau "weather hops" daily at Scott Field, Belleville, Ill., since July 1, 1934. During the period July 1, 1934, to February 15, 1936, 595 days in all, a total of 465 flights was made. Although the average altitude of the flights was about 18,000 feet above sea level, two flights, one by Private Arnold T. Johnson and the other by 2nd Lieut Paul H. Meng, were made above 21,000 feet. O-19 planes were used until recently, when a BT-2B plane was equipped to carry on the daily flights. Two-way radio phone communication was used. In summer, the flights were scheduled for 3:15 a.m. In winter, however, they were scheduled for daylight.

During the period above mentioned, only one plane was damaged, and it was a complete loss. This plane was flown by Captain Raphael Baez, Jr., on October 12, 1935. Captain Baez encountered a regional fog and was forced to "bail out" when his plane ran out of fuel. It is to be noted that his plane, an O-19, had 80 gallons of gasoline before it was warmed up and that he flew 4 hours and 31 minutes before running out of fuel.

The purpose of these flights is to secure "air mass" data daily to further the knowledge of air conditions at high altitudes and its relation to existing weather. The weather plane carries an aerometeorograph, a combination of four different instruments, on its right wing. The aerometeorograph has 4 red-inked needles, one for barometric pressure, one for relative humidity, one for temperature and one for time, which make a continuous record on a single chart during the flight. From this chart the plane's maximum altitude can be determined. There are two aerometeorographs at the U.S. Weather Bureau Office at the field. While one is being used, the other is being checked for accuracy. The time required to check one is thirty days.

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ALL IN A DAY'S WORK AT HAWAIIAN AIR DEPOT

Having left home at 6:30 a.m., walked a few blocks, ridden in an automobile from ten to fifteen miles, presented passes for inspection of the Marine Guard at the Pearl Harbor entrance, we arrive at the Coal Dock at 7:10 a.m., just as the "Manuwai" (Waterbird), the commercial ferry, docks. A roaring of motors, and an array of anywhere from one to thirty school busses, private automobiles, motorcycles and army trucks driven by sleepy-eyed drivers, unload. About 250 officers, enlisted men and civilian employees rush on to the boat, closely followed by a train of oil trucks, produce trucks and other vehicles Luke-Field bound. With a clanging of bells, tooting of whistles and a mighty shudder, the Waterbird shoves off in an ungraceful manner and as much unlike any waterbird as one can imagine.

Groups gather to discuss topics of the day. During the ensuing 15 minutes, wars are fought, presidents elected and the Army reorganized. A casual examination of the groups makes it difficult to imagine that we are in an integral part of the United States. Hawaiians, Japanese, Chinese, Koreans, Portuguese and, can I believe my eyes? Yes, suh! Sho nuff, a pure Alabama negro!

Someone calls "shark," and, although more or less a common sight, a scramble to the side of the boat is made. False alarm - another practical joker or a malihini's (newcomer) imagination. Recently, one of the malihinis called attention to a turtle which turned out to be a large jellyfish with a cocoanut floating alongside.

Terrific blasts of whistles - the Navy is pulling out for maneuvers. Submarines glide gracefully by, trim cruisers, and as we near the Luke Field side, a terrific roar and the first of a squadron of seaplanes leaves the water a few hundred yards away, followed by another and another. At 7:30 we land at the Luke Field dock, and another day is begun.

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The News Letter is indebted to the Air Corps Training Center, Randolph Field, Texas, for the photograph of Class 24-B, graduating from Kelly Field on February 15th, last, which appears as an insert in this issue. Reproduced as it was on the rotor-print duplicating machine, the clearness of this picture testifies to the skill of the photographic and printing shop personnel at the Training Center.

PROMOTION OF NONCOMMISSIONED OFFICERS

A list is given below of Staff Sergeants placed in the order of their standing on the eligible list for promotion to the grade of Technical Sergeant, Air Corps, effective January 1, 1936. This list contains only the first 250 names on the qualified list. The complete list carries the names of 698 men.

No.	Name
1	Camire, Henry*
2	Quist, John
3.	Adams, Hurschell B.
4	Bergman, Henry A.
5	Hudson, Edward J.
6	Simon, Max
7	Ball, Lyle
8	Silberman, Samuel
9	Emerson, Claud
10	Lawrence, Frederick
11	Biniakiewicz, Mike
12	Eggeling, George A.
13	Polaska, Edward P.
14	Hoyle, John T.
15	Risenberg, Max
16	Fry, Walter W.
17	Higbie, Elza L.
18	Norris, Robert S.
19	Culver, Clarence G.
20	Robinson, Lee
21	Moran, John F.
22	Hoffman, William
23	Jusko, Edward A.
24	Newman, Willie B.
25	Smith, Forrest
26	Bikle, Charles R.
27	Ackerly, Horace R.
28	Taylor, William R.
29	Roberts, Fred A.
30	Hutchens, Peyton E.
31	McFadden, Arvel
32	Berend, Victor
33	Davis, John L.
34	Cobb, Bescla
35	Wendell, Charles E.
36	Mauro, John A.
37	Protivnak, Michael
38	Passwaters, Francis M.
39	Toohey, Thomas F.
40	Balacke, Harry
41	Franklin, Henry L.
42	Falls, Clyde L.
43	Jones, George S.
44	Crocker, John S.
45	Halsey, Andrew J.
46	Wildman, Armstead A.
47	Capps, Dwight M.
48	Brown, Jacob S.
49	Rice, Robert E.
50	McGraw, Mathew A.
51	Gilbert, Claude M.
52	Kerr, Raymond
53	Hoober, Asa C.
54	Shaw, Carrel L.
55	Carr, Edward L.
56	Richard, George M.
57	Joyner, Charles
58	Banas, Walter E.
59	Rozburski, Michael
60	Cheatham, Roy D.
61	Johnson, Karl R.
62	Cross, Charles M.
63	Rowen, Halstead J.
64	Sheffield, William K.
65	Fuecker, Harry N.
66	Milliard, Peter L.
67	Vielock, Adam J.
68	Oram, George H.
69	Horton, Dewey
70	Roeske, Myron
71	Williams, John M.
72	Barlow, Robert L.
73	Gardner, Edgar W.
74	Kacziba, Alexander
75	Moss, Grover C.
76	Caldwell, James M.
77	Kirby, Louis A.
78	Schantel, August
79	Walton, Joseph L.
80	Chuturich, Michael
81	Gorin, Maurice
82	Peacock, Floyd H.
83	Elder, James C.
84	Morris, Reuben B.
85	Hoffman, Leonard L.
86	Simpson, Walter
87	Malkemus, George D.
88	Boudreaux, Henry D.
89	Monroy, Phillip P.
90	Jerrigan, William H.
91	Tucker, James R.
92	Fagan, Luther W.
93	Greene, Robert H.
94	Williams, Leonard
95	Willett, Ray E.
96	Hurst, Frank
97	Wolfe, Jack
98	Darcy, Lawrence J.
99	Kramberg, Joseph
100	Hicks, Harry
101	Mehrert, William
102	Sloan, Miles B.
103	Blesh, Earl S.
104	Benson, Harold P.
105	Dearborn, James E.
106	Nipper, Eli B.
107	McClellan, Edwin J.
108	Marshall, John A.
109	Davis, Golden R.
110	Bennett, Paul D.
111	Fredericks, Joseph M.
112	Hymes, Samuel
113	Silva, Manuel
114	Yocum, Johnny V.
115	Platt, Graham
116	Jones Thomas A.
117	Martin, Morris
118	Hoppe, Helmar B.
119	Norich, Albert I.
120	Barkhurst, Frank M.
121	Laquatra, Leo
122	Aldrich, Guy A.
123	Gurley, Bert E.
124	Smith, Anthony
125	Hygh, Rellifcrd
126	Richardson, Homer L.
127	Moore, John H.
128	Deming, John B.
129	Dossett, Elbert
130	Tuffly, Edward W.
131	Boyles, James M.
132	Sarem, Jack
133	Cheatham, Charles W.
134	Kidd, Harvey O.
135	Winfrey, Oliver O.
136	Caleagne, Frank A.
137	Hampton, Jack
138	Morris, William C.
139	Washburn, Emory E.
140	Senter, Herman F.
141	Gorman, Andrew J.
142	Eanes, Louis V.
143	Benevides, Joseph H.
144	Ross, Delano W.
145	Jenson, Oluf T.
146	Mondlt, Howard
147	Eldridge, Russell
148	Leonard, Dale F.
149	McLish, William B.
150	Ellis, Edwin E.
151	Hansen, Henry P.
152	Schultz, Steve J.
153	Kannolt, Harold B.
154	Chaudron, Norvelle
155	Hammeck, Robert W.
156	Huffman, Ernest J.
157	Anderson, Chauncey L.
158	Langston, Wilbur E.
159	Carr, George W.
160	Martini, Henry
161	Criss, Karl W.
162	Brown, Walter D.
163	Burton, Jack
164	Tormey, Thomas P.
165	Purkins, Gerald M.
166	Weeks, Edward
167	MacDermott, William K.
168	Schuette, Alfred A.
169	Weiss, Joseph
170	Riviere, Jean E.
171	Peterson Cayus P.
172	Chovenitz, Frank J.
173	Ward, Leland S.
174	Weeks, Alvin C.
175	Jolly, Arthur
176	Weltz, William M.
177	Dooney, John J.
178	Walsh, Bernard A.
179	McGhee, Lester L.
180	Martin, Paul H.
181	Norris, Walker W.
182	Newland, Gus V.
183	Hagan, George M.
184	Warren, Henry M.
185	Shoellhorn, Erhard
186	Ray, Floyd E.
187	Terrell, Harry A.
188	Visbal, Germain A.
189	Meeks, John D.
190	Gregg, Emmett L.
191	Harth, George J.
192	Parnes, Max

*Appointed Technical Sergeant January 2, 1936.

No.	Name	No.	Name	No.	Name
193	Charbaugh, Michael E.	213	West, Henry L.	232	Pond, Everett L.
194	Brock, Morris	214	Abromitis, Jacob	233	Ciphon, Paul W.
195	Coulla, Jack	215	Flores, Alberto	234	Peluso, Tony J.
196	Novak, Louis W.	216	Bryan, Hugh	235	Nielsen, Jean
197	Guttierrez, Michael E.	217	Ferguson, Homer E.	236	Hinck, Reuben F.
198	Carr, James W.	218	Slattery, Houston	237	Powers, Barron C.
199	Hodges, Herbert P.	219	Simpson, Johnnie S.	238	Prince, Kerman
200	DeFrod, Lyman	220	Williamson, Henry	239	Kelly, Bernard F.
201	Falk, John A.	221	Hall, Bolton	240	Edmondson, Albert B.
202	Smith, Sigsbee J.	222	Michael, Edward	241	Browning, Earl H.
203	Caris, John A.	223	Hunsberger, Horace K.	242	Meyers, Harry
204	Delaney, Samuel H.	224	Kolb, Peter, Jr.	243	Barnhill, Jesse J.
205	Castlemaine, Earl W.	225	Mobley Emmett A.	244	Greene, Charlie H.
206	Morrison, Jay P.	226	Collins, Jacob	245	Hollis, Claud D.
207	Chestnutt, Herman L.	227	Martin, Troy V.	246	Shelley, Verl A.
208	Armbruster, Otto	228	Dwyer, Charles L.	247	Oliver, Wesley K.
209	Tetu, Dona E.	229	Laza, Joseph C.	248	Mulkey, Loyd
210	Beckham, Reuben S.	230	Podraza, Walter H.	249	Illy, John
211	Bishop, Chalmers N.	231	Klapak, Andy	250	Knowles, James R.
212	Warren, Luther				

The delay in the publication of this list has been caused by the receipt of inaccurate data as to total length of Army service of a large number of Staff Sergeants, necessitating a thorough check with available records in order to determine the proper place of each man on the list.

It will be noted that the names of a number of noncommissioned officers appear on the list, especially near the top thereof, who were not carried on previous lists. This condition is due principally to the fact that such men, appointed Staff Sergeants in 1930, have recently acquired the minimum of five years' service in the third or higher grade in the Air Corps to establish eligibility for the grade of Technical Sergeant, Air Corps. Their total length of Army service thus places them ahead of Staff Sergeants with less service. The large increase in the total number of men on the qualified list is also probably due to this same condition.

Those Staff Sergeants appointed in 1931 will likewise acquire five years' service in grade in 1936, and, if subsequently recommended for promotion, will be placed on next year's qualified list in their proper places according to total length of Army service. There will thus not be so many Staff Sergeants acquiring the five years' service in grade after 1936.

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COAST ARTILLERY OF BOTH REGULARS AND RESERVES PARTICIPATE IN MARCH FIELD MANEUVERS

Expressing themselves as being satisfied with their week end of field service, 48 officers of the 977th Coast Artillery, a Los Angeles antiaircraft Army reserve unit, returned to their homes in Los Angeles Sunday afternoon, February 9th, after spending Saturday night and Sunday morning in the vicinity of March Field, Calif. They were the guests of the 63rd Coast Artillery (antiaircraft) which carried them from Fort MacArthur for the week end of instruction. The regulars were commanded by Lieut.-Colonel R. Duncan Brown, and the reservists were in charge of Lieut.-Colonel A.J. French, unit instructor of the 977th Coast Artillery and a member of the Regular Army. The regimental commander of the 977th was Lieut.-Colonel E. A. Evans.

Three hundred enlisted men and ten officers of the 63rd participated in the maneuver. It covered a 120 degree triangle with March Field as the apex and Corona and Elsinore as the bases of the two legs. Entitled "Antiaircraft Defense of March Field," the problem used twelve positions, employing four 3-inch guns and eight .50 caliber machine guns.

When the five searchlights and five sound locators were set up in position in the triangle, Lieut. Harry Crutcher flew a Martin Bomber from the direction of Corona, making every effort to dodge the searchlights scattered through the area. When the sound locators picked up the motor noises they relayed the information through comparators to the searchlights which pinned down the Bomber at the convergence of their 800,000,000-candle power beams.

With the target clearly defined before them, the ground guns silently trained their sights on the night raider and technically brought him to earth. The plane was flying at a speed of about 200 miles an hour through the March Field skies.

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Two Maxwell Field officers are under orders to report for duty next August as students at the Army Industrial College, Washington, D.C., viz: Major John I. Moore (Captain) and Captain Russell L. Maughan, Air Corps. Both officers are on duty at the Tactical School, Captain Maughan being a student thereat.

Effective February 15, 1936, Lieut.-Colonel Walter R. Weaver, Air Corps, was relieved as Chief Inspector, G.H.Q. Air Force, Langley Field, Va., and assigned to duty as Station Complement Commander, Station Complement, Langley Field. During the period of this duty assignment, this officer will hold the temporary rank of Colonel.

HOW CAN WE AVOID WAR?

Of late the people of this nation have manifested more than usual interest concerning the question "How can we avoid war?" The seriousness with which this question is being debated by people in all walks of life may be attributed, no doubt, to the war now in progress in Africa, to the general spirit of unrest which has prevailed for some time in foreign countries, and to other factors too numerous to mention here.

One popular radio entertainer, sensing the growing interest in this question, offered a very substantial prize to the person submitting the best answer to the above question. It is understood that thus far over 200,000 persons have submitted their ideas on the subject. Surely, out of this vast storehouse of public thought there should emanate many valuable ideas for our statesmen to ponder over.

A prominent figure in public life, the Hon. John J. McSwain, M.C., Chairman of the House Military Affairs Committee, used the theme "How can we avoid war?" for his address on February 9th, last, at Mecca Temple, New York City.

Expressing his firm belief in adequate preparedness, Mr. McSwain stated that the causes of war may be generalized under the following heads:

(a) National, racial, religious, rivalries, jealousies, and envy.

(b) Commercial rivalries and competitions.

(c) Industrial competitions, causing unemployment, dislocation of populations, and thus human misery and distress.

(d) Mutual distrust based upon ignorance of each other, thus creating fear, and fear breeds armaments.

(e) National greed for power and territorial expansion, being but the expression in a collective way of the individual and personal greed and ambition of individual citizens.

(f) Vaulting ambition of individual autocrats, formerly represented by rulers, kings, emperors, kaisers, and czars, and, in these very modern times, by dictators under different names, but seeking to exploit personal success and glory at the expense of the people's sacrifice and suffering, because the governments have been allowed to consolidate all powers in the hands of single persons, rather than having the power distributed among numerous representatives of the sovereign people who ultimately must do the fighting, the paying and the suffering in the event of war.

Mr. McSwain dwelt at length on the neutrality policy of this nation, involving the freedom of the seas; prohibition of the sale of implements of war to belligerent nations; keeping American citizens and American ships at home during the progress of a war overseas, thereby placing this country in a state of virtual isolation. He also touched on various peace-promoting plans, such as requiring a popular vote or referendum before any declaration of war be made, except to prevent invasion; joining the League of Nations and entering into the World Court; complete disarmament among all nations; universal mobilization of manpower and resources; stopping profiteering in time of war, etc.

"America is fortunate in her geographical situation which determines her strategy," Mr. McSwain declared. "With an ocean on each side, and with friendly republics occupying both the North and South American Continents, to whom we have always played the part of big brother, we contemplate nothing but a defensive position to maintain our own peace and to prevent interference with the republican institutions of our sister republics, an obligation we assumed in 1823 under the Monroe Doctrine. With the exception of the War of 1812, which was a mere distant repercussion of the Napoleonic wars, and with the further exception of the War with Spain in 1898, which was but a logical development of the Monroe Doctrine, we have had nearly 150 years of peace with European powers, with the exception of our war against the German Empire. But what of the future? Multiplied speed by steamships, rapid communication by telegraph, telephone, and radio, with aircraft capable of spanning the Atlantic Ocean in about 15 hours, America's happy isolation from Europe and her turmoils is about to cease. With our expanded commerce, with our vast financial interests in European countries, nothing European can long remain a matter of indifference to us. All these numerous points of contact increase our chances for collision with the interests and finally the forces of the larger nations of Europe. In view of this changed position, nations though separated by oceans, now have almost a common frontier, and cities and industrial areas even located far inland from our coasts are now upon the front line and are subject to attack from the air by a hostile air fleet. This spells but one conclusion for America, and that is to have an air force at least equal in numerical strength and more efficient if possible in personnel and in machine performance than that of any other nation.

"The only defense against air attack is air defense. According to all human probability, based upon the experience of history, America may have to face a combination of two or more powerful fighting nations. In order to reach us they will be drawn far from their base but nevertheless, they can accomplish great destruction of life and property, and it remains for us to be prepared to beat down any such hostile air fleet. No longer are mere seaport towns and cities alone interested in problems of defense. Every city and industrial center, however far located from salt water and a land frontier is a possible objective of air attack. This makes the whole Nation vitally concerned with the problems of defense. Fighting is no longer a matter for the soldiers in the air or upon the ground or the sailors on the sea. War becomes a paramount peril and indescribable hazard to the whole civilian population, and every man, woman and child, of every age, business, station in life, or calling, is vitally concerned with two persistent problems. These are, first, to see that America pursues such course as may not provoke animosity, desire for revenge, and therefore invite attack from any other nation or combination of nations. Second, to be so prepared on land, on water, and especially in the air that if any other nation or combination of nations, disregarding our good will, ignoring our desire to be friends, should attack us for any cause, actual or imaginary, then we will be prepared to defend our people and our possessions, even as the father should be prepared to defend the home of his wife and children against the midnight burglar and assassin."

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THE NEW ENGLAND WINTER TEST FLIGHT
An Enlisted Man's Observations

Here we are, back home again in our barracks. The 1936 winter test flight is over. Have we learned anything this year? The officers say we have. I think we have, too. Being an enlisted man with not much rank, I am supposed to just look and listen, yet I think a few faults, which probably no one else noticed, could be discussed at this time.

As for clothing, the mechanics trudged around in the cold, working on the ships, and wearing one-piece, two-piece, winter flying suits, and everything else that they could pile on their bodies. They were warm, maybe, but the clothing was too clumsy and bulky to allow free movement of the limbs. Why not have them wear a heavy knitted wool suit (we now have some of them in stock at several fields, I understand) with a common suit, mechanic's, over it? This combination would be just as warm, much cheaper to replace if lost or destroyed, and would be more compact and easier to "move around in."

Ever work on an engine in the cold? Did your fingers get cold? Let's have some plain goatskin gloves and some regular white canvas gloves to work in. Heavy leather gauntlets can't be worn when doing mechanical work on a ship. They are too big and clumsy, so most of the men work bare-handed.

That would fix up the ground crew, I believe.

"A Polarbear."

WING FLOATATION BAGS OPEN DURING FLIGHT

Through skillful piloting, the 50th Observation Squadron, Luke Field, T.H., was saved an O-19 airplane which might have been lost. Lieut.-Colonel Asa N. Duncan, the post commanding officer, experienced what is believed to be the first incident where two wing floatation bags opened during flight.

Immediately following the take-off and when the airplane was about 75 feet off the ground, both floatation bags inflated. When released, the metal cover of the left bag housing struck the left aileron, damaging it badly.

Col. Duncan immediately attempted to gain altitude, and after 15 minutes gained 2,000 feet. During the climb the left floatation bag was torn loose from its connector pipe and tie flaps, and fell from the airplane. At the same time the right bag began to deflate. The pilot, after assuring himself that the controls were fairly free, made a perfect landing at Luke Field.

Investigation by representatives of the Hawaiian Air Depot, the Squadron and Station Engineer Officers, resulted in the conclusion that the mechanical trigger cam and spring on the cutter release valve was defective. Tests disclosed that the vibration of take-off could release the spring.

The 50th Observation Squadron accomplished Unsatisfactory Reports recommending further research in the use of this equipment.

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PERSONNEL NOTES, O.C.A.C.

The following Air Corps officers recently reported for duty in the Office of the Chief of the Air Corps, with assignments, as set forth below:

Colonel Rush B. Lincoln as Chief of the Personnel Division. Col. Lincoln up to recently was on duty at the Headquarters of the 1st Corps Area, Boston, Mass. His present assignment is not new to him, as he was Personnel Executive and Acting Chief of the Personnel Division during the War and later Chief of the Personnel Division to June, 1922.

Lieut.-Colonel H.H.C. Richards to the Information Division. Previous to this assignment, Col. Richards was on duty at the Advanced Flying School, Kelly Field, Texas, as Assistant Commandant.

Major Arthur E. Easterbrook to the War Plans and Training Division. As Executive Officer, Air Corps Training Center, Randolph Field, Texas, up until recently, Major Easterbrook held the temporary rank of Lieut.-Colonel. He is one of a very few officers remaining in the Air Corps who hold the unofficial title of "Ace." He is credited with the destruction in combat during the war of six enemy airplanes.

NEW RADIO EQUIPMENT FOR THE AIR CORPS

1. To acquaint all concerned with the policy of the Chief of the Air Corps relative to fixed radio aids for the Air Corps and the steps being taken to provide these aids, it is deemed advisable that the following information be published:

2. Decisions as to the stations on which equipment is to be installed take into consideration the present available aids, such as Department of Commerce installations, commercial stations including broadcast stations, and Army stations.

3. Radio aids for navigation, homing, weather broadcasts, instrument landing, and intermediate frequency communication for traffic control will be provided as rapidly as funds become available. These aids augment those now provided by the Department of Commerce and will be operated under regulations which parallel those now used by that Department.

4. The equipment will be identical with that used by the Department of Commerce and will be installed in an identical manner.

These aids are tentatively set up for installation at the following points:

Dept. of Commerce type BRA stations

*Maxwell Field
Dryden, Texas;

Dept. of Commerce type MRA stations

*Langley Field
Pope Field
Mitchel Field
*Patterson Field
Selfridge Field
Chanute Field
Scott Field
Fort Riley
Fort Sill
Hatbox Field
Kelly Field
Hamilton Field
Sunnyvale

*Note - Being procured with F.Y. 1936 funds.

Both BRA and MRA stations require the same size plot, a minimum of 600' x 600'. Both have five 125' vertical insulated towers as radiators, the same size building at the center of the plot and the same feeder systems. The transmitters for the BRA stations are 800 watt crystal control, and for the MRA stations 150 watt crystal control. The plots should be fairly level and clear of all obstructions, should be located a fair distance from large metallic objects which might distort the emitted radio pattern and where the 125' towers do not constitute a hazard to flying.

Dept. of Commerce type ML stations

Hensley Field and Sloan Field

These stations require a clear level plot at least 300' x 300'. The antenna system consists of crossed loops on 50-foot wooden poles. The transmitters used are crystal control 150 watt units, but because of the antenna system, the station emits a signal effective only for marking the locality.

5. Instrument landing equipment will be supplied the following stations. These will operate in the same manner and on the same channels as the Department of Commerce uses. All other Army landing equipment is for training purposes only and will operate on frequency assignments made by the Chief Signal Officer in bands available to the Army.

Mitchel Field
Langley Field
Chanute Field
Selfridge Field
Maxwell Field
Barksdale Field
March Field
Hamilton Field
Scott Field
Patterson Field
Dryden, Texas

6. Airport transmitters for the control of air traffic within ten minutes or thirty miles of the airdrome will be supplied the following stations. These transmitters having an allowable radiated power of 15 watts, will be crystal controlled, and set on 278 KCS.

Mitchel Field
Patterson Field
Scott Field
Fort Leavenworth
Barksdale Field
Kelly Field
Dryden, Texas
Sunnyvale.
Langley Field
Selfridge Field
Chanute Field
Maxwell Field
Hatbox Field
March Field
Hamilton Field

7. For point to point, air alert, airplane communication, etc., a new high frequency net is being established using 400 watt, ten channel, crystal control transmitters. These sets are now on contract and will be set up at the following stations:

Eastern Division

Mitchel Field
Bolling Field* (a)
Langley Field
Pope Field
Pittsburgh
Middletown

Central Division

(a) Patterson Field*
Chanute Field
Selfridge Field
Scott Field
Fort Leavenworth
Fort Riley

*Control - (a) Already supplied.

Southeastern Division

Maxwell Field*
Barksdale Field
Chapman Field
Candler Field
Murfreesboro, Tenn.

Southwestern Divisio

Kelly Field*
Tucson, Arizona
Biggs Field
Dryden, Texas
Sloan Field
Hensley Field
Hatbox Field
Fort Sill

Western Division

*March Field (Control)
Boeing Field
Pearson Field
Medford, Oregon
Hamilton Field
Sunnyvale

*May be moved to Hamilton

8. These latter sets will replace old and obsolete intermediate frequency equipment now installed at the various stations and being used exclusively for Air Alert communication. They will be installed for Air Alert work only and will not be used for administrative traffic. Equipment now being used for administrative traffic will continue to be so used.

9. In addition to the foregoing, a receiver and loud speaker will be provided

(Continued on page 18).

BIOGRAPHIES

COLONEL CHALMERS G. HALL, AIR CORPS

Colonel Chalmers G. Hall, Air Corps, Chief of the Supply Division, Office of the Chief of the Air Corps, dates his affiliation with the aviation branch of the Army from October 20, 1917, when he was placed on active duty as a Lieut.-Colonel, Signal Corps, and delegated the task of organizing motor mechanics troops. He was promoted to Colonel, Signal Corps, December 29, 1917, and up to the end of February, 1918, commanded the Signal Corps Camp and the 4th Regiment of Motor Mechanics at Camp Hancock, Ga.

After a brief period of temporary duty in Washington, D.C., in the Office of the Chief Signal Officer, in connection with the organization of personnel for Air Service Production Center No. 2, A.E.F., he sailed for duty overseas, arriving in England on July 31, 1918. For several weeks he commanded the 4th Motor Mechanics Regiment at Air Service Production Center No. 2, Romorantin, France. He was then assigned to the Aviation Office, Base Section No. 3, Service of Supply, London, England. While on this assignment he was on temporary duty at various Air Service A.E.F. activities at Paris, Tours, Romorantin and Chaumont, France.

From November 1 to 11, 1918, Colonel Hall was on duty with the Night Bombardment Section, Air Service, A.E.F., London, and thereafter, until his return to the United States, as Commanding Officer, American Acceptance Park, Manchester, England.

On March 12, 1919, Colonel Hall was assigned as Chief of Air Service Procurement, Supply Division, Office of the Director of Air Service, Washington, He received the commendation of the Director of Air Service for his work in organizing the Motor Mechanics Regiments of the Air Service, the morale of which was declared to be of the highest standard, and for the efficient service he rendered overseas.

Assigned to duty in July, 1921, as a student at the Army Balloon School at Ross Field, Arcadia, Calif., he graduated therefrom the following September, and was rated "Balloon Observer," October 3, 1921. He next took a course of instruction at the Airship School at Langley Field, Va., and received the rating of "Airship Pilot" as of February 10, 1922.

For slightly over a year, Colonel Hall was in command of Scott Field, Belleville, Ill., and in March, 1923, he was assigned for further airship training at the Naval Rigid Airship School at Lakehurst, N.J. After completing the course, he remained on duty at Lakehurst for a year as Observation and Liaison Officer. In July, 1926, he was assigned as Air Officer of the 6th Corps Area, Chicago, Ill.

In August of the following year, Col. Hall began duty as a student at the Army War College, Washington, D.C., graduating in June, 1928, following which he was assigned to the 78th Division, Organized Reserves, with headquarters at Newark, N.J. He served as Unit Instructor, Chief of Staff and Supply Officer of this Division and as Unit Instructor of the 303rd Engineers. In November, 1933, he also assumed the duty of District Commander, Civilian Conservation Corps, District No. 1, State of New Jersey.

On October 1, 1935, Colonel Hall was assigned to temporary duty as Chief of the Buildings and Grounds Division, Office of the Chief of the Air Corps, and on January 15, 1936, was designated as Chief of the newly organized Supply Division, Office of the Chief of the Air Corps.

Colonel Hall was born February 8, 1875, at Salisbury, N.C. He graduated from the United States Military Academy in 1897, and was commissioned a second lieutenant of Cavalry. He was promoted to 1st Lieutenant, February 2, 1901; to Captain, September 19, 1903, and to Major, May 15, 1917. He graduated from the Army School of the Line in 1912.

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LIEUT.-COLONEL ROY M. JONES, AIR CORPS

Prior to his entry into the military service, Lieut.-Colonel Roy M. Jones, Air Corps, Executive, Office of the Chief of the Air Corps, had ten years' experience in civil life as an electrical engineer. He was born at Annapolis, Md., January 3, 1886, and graduated in 1910 from St. Johns College, Annapolis, Md., with a B.S. degree in engineering.

Commissioned a second lieutenant of Infantry, November 30, 1912, he was promoted to 1st Lieutenant, July 1, 1916, and to Captain, May 15, 1917. He was detailed to the Signal Corps from the Infantry in October, 1916, and was on duty at the Headquarters of the Southern Department, San Antonio, Texas, as Assistant to the Department Signal Officer until he was ordered to Washington, D.C., in June, 1917, to duty in the Finance and Supply Division, Office of the Chief Signal Officer. He was promoted to Major, Signal Corps, September 29, 1917.

During 1917, when the Equipment Division of the Signal Corps was established, Col. Jones was assigned to duty in the Executive Department thereof. In January, 1918, he was appointed Assistant Chief of the Executive Staff, Bureau of Aircraft Production. He was promoted to

Lieut.-Colonel, Air Service (Production) August 21, 1918.

Transferred to the Office of the Director of Air Service in March, 1919, Col. Jones was on duty as Assistant to the Chief, Air Service Procurement, until the latter part of October of the following year, when he was assigned to undergo lighter-than-air training at the Balloon School at Ross Field, Arcadia, Calif. After completing the required tests and receiving the rating of Balloon Observer, as of March 29, 1921, he remained at Ross Field as Executive Officer until July, 1921, when he returned to duty in Washington as Chief of Air Service Procurement.

In June of the following year, Col. Jones was transferred to the Middletown, Pa., Air Depot for duty as Officer in Charge of the Industrial War Plans Section. In February, 1923, he assumed the additional duty of Commanding Officer of the Air Depot.

From September to December, 1924, he was on duty at Brooks Field, Texas, and he was then transferred to Kelly Field, Texas, where he completed the Special Observers' Course at the Advanced Flying School, being rated "Airplane Observer" as of March 23, 1925.

Assigned to duty in the Panama Canal Department in April, 1925, Col. Jones served as Executive Officer of France Field and of the 6th Composite Group, at various times as Commanding Officer of the Post and Group, and as Acting Air Officer of the Panama Canal Department. Towards the end of his tour of foreign service, he served as Executive Officer of the Panama Air Depot.

Following the completion of his service in Panama, Col. Jones, for the next four years, was on duty with the Materiel Division of the Air Corps at Wright Field, Dayton, Ohio, as Chief of the Purchase Branch, Procurement Section.

In July, 1932, he was assigned as student at the Army Industrial College, Washington, D.C. His graduation in June of the following year was followed by his detail as student at the Army War College, Washington, D.C., from which he graduated in June, 1934. He was then assigned to his present duty in the Office of the Chief of the Air Corps as Executive.

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BIG BIRD DROPS FOOD TO LITTLE BIRDS

In connection with the efforts of the Michigan Department of Conservation to prevent the starvation of pheasants, quail and other wild fowl because of their inability to obtain food on account of the deep snow, a Transport airplane from Selfridge Field, Mt. Clemens, Mich., piloted by 1st Lieut. Charles R. Anderson, Air Corps, and loaded with grain, was flown on February 15th over advantageous points and the grain dropped thereat.

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PURSUIT PLANES FERRIED TO SELFRIDGE FIELD

Sixteen Air Corps officers recently journeyed from their home station, Selfridge Field, Mt. Clemens, Mich., to the plant of the Boeing Aircraft Company, Seattle, Washington, to procure and ferry to their station P-26C Pursuit airplanes which were ready for delivery.

Officers departing for Seattle on February 6th were Lieut.-Colonel Ralph Royce, Majors Edwin J. House, Fred C. Nelson, George P. Tourtellot, Captain Emmett O'Donnell, Jr.; February 8th - Captains Leo H. Dawson, John F. Egan, Frank J. Coleman, 1st Lieuts. Murray C. Woodbury, David W. Hutchison; February 15th - Captains Clarence F. Hegy, Jarred V. Crabb, Norman R. Burnett, 1st Lieuts. Paul W. Blanchard, Jr., William J. Bell and Henry B. Fisher.

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MORE SHORT WAVES FROM SCOTT FIELD

Scott Field, Belleville, Ill., has another amateur short wave radio operator and another short wave station. Private Olis O. McIntire, 9th Airship Squadron, received a license to operate his station, W9WGK, on 1867.5 kilocycles. Private McIntire was given instruction in short wave radio operation by Private Frank W. Brashears, 9th Airship Squadron, the operator of Scott Field's other amateur station, W9CJH. Both stations are on the air each evening.

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TRANSFER OF AIRPLANES TO PANAMA

The 20th Bombardment Squadron, Langley Field, Va., on February 11th, transferred to the Panama Canal Department four B-6A type Keystone Bombers, which were scheduled to be flown to the Canal Zone by Air Corps pilots on duty there.

Due to the transferring of ships and equipment, the 35th Pursuit Squadron, Langley Field, has been kept very busy. The P-12F planes had to be inspected and made ready for their flight to Panama. These P-12's were replaced by P-6E planes; a change from the Pratt & Whitney engine to the Curtiss "Conqueror" engine. This change will cause all personnel to acquaint themselves with the new equipment.

In due time the pilots from the Canal Zone arrived at Langley Field and took off on February 11th for the San Antonio Air Depot, Duncan Field, Texas.

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Major Robert C. Candee, Air Corps, is under orders to report next July for duty as student in the 1936-37 senior course at the Naval War College, Newport, R.I. He is now attending the Army War College.

AMERICAN COMMERCIAL AVIATION'S CONTRIBUTION TO NATIONAL DEFENSE

By Major-General Oscar Westover, Chief of the Air Corps

It is timely to survey all our present assets for National Defense. Among these the part that commercial aviation can contribute is important. Without actually building commercial airplanes for quick conversion to Bombers, as European countries are charging each other with doing, commercial aviation in the United States is making many and important contributions to our preparations for defense against air attack.

So far as military aviation is concerned, the world has reached a fateful position on the threshold of wider horizons, where it awaits the touch of genius to supply the novel concepts required for further progress. In view of the past accomplishments of commercial aviation, it is quite as likely that this genius will appear among its ranks as that he will be a product of the Army or the Navy.

Perhaps the greatest aid given by commercial aviation directly to military aviation is the support for a year-round employment of the personnel of aircraft factories. The work of supplying the airlines with their airplanes has filled in the gaps between Army and Navy contracts and has permitted the factories to avoid the great losses suffered each year, before commercial aviation reached any important size, through the necessity for discharging employees at the end of one contract and getting them together at the beginning of the next.

Private flying does not play so important a role in this regard since there is such a difference in the type of planes used for private flying and those used for military purposes. On the other hand, the difference between commercial airliners and military airplanes, especially Bombers and patrol boats, is so slight that the same engineering talent, mechanical personnel and, in many cases, the same tooling and shop equipment fits into the fabrication of both. It is due to this fact that commercial aviation fits so snugly into the scheme of production of military aircraft.

The financial support afforded by the airline's business enables aircraft factories to maintain adequate engineering staffs, laboratories and testing equipment and the output of these is of as great an aid to the improvement of military aircraft as to the improvement of commercial aircraft. No one questions the fact that progress in the development of military airplanes has been advanced materially by the impetus given through the manufacture of the modern airliners. In the past six years commercial aviation has assumed important proportions in the United States, and the development of military types of aircraft has been fully twice as rapid as in the six years immediately preceding this period.

In the field of ground facilities for the operation of aircraft, the assistance of commercial aviation is second only to that in the production field, and in this field private flying, also, has aided materially. The support which comes from all over the United States for the work being done by the Bureau of Air Commerce is furnished quite as much by private flyers as by the commercial operators. The result has been that Federal funds have been made available each year to increase materially the ground aids to flying. These comprise the construction and improvement of intermediate landing fields, radio beacons, lighted airways, marker beacons, weather broadcasting stations and the maintenance of an extremely valuable information service, which keeps pilots informed of hazards and operating conditions. This service also aids in disseminating the technical improvements in operation accomplished from time to time. Recently the Bureau of Air Commerce has installed blind landing systems at a number of the larger airports throughout the country, and these have already proved to be an important safety measure where air schedules must be maintained and flying must be done under adverse weather conditions.

The increase in commercial and private flying has caused the various municipalities to take a renewed interest in the construction and improvement of municipal airports to serve the needs of this flying. In the last two years the Federal Government has aided tremendously in this work also, by making available to States and municipalities considerable sums from FERA, PWA, CWA, and now from the Works Progress Administration, to be used for improving airports and constructing additional airports. Over 1,000 airports in all parts of the United States have felt the beneficent influences of Federal Government aid, and commercial and private flying have thus had a large share in contributing to this feature of National Defense. These expenditures and the work accomplished by the Bureau of Air Commerce are very direct aids to air defense, since the facilities which they have provided are as useful to military aviation as to commercial and private flying.

The small number of Regular Army and Navy air fields dotted around the country are entirely inadequate to support the operations of military aircraft in large numbers in a defense against air attacks. Recourse must be had to the ground facilities provided for commercial and private flying to serve these needs. As an example of the extent of this requirement, plans now in course of preparation contemplate the use of numerous municipal and commercial airports in each strategic area. This number amounts to over 550 in all strategic areas. In addition, approximately 200 airports will be required in interior portions of the Continental United States to serve as servicing and refueling stops for military aircraft flying from one strategic area to another, or from their home stations to the various strategic areas. It will thus be seen that almost every town and city if importance in the United States has a part in providing the means for effective defense against air attack.

The third great contribution which commercial aviation makes to National Defense is in the training of competent pilots, many of whom are members of the Air Reserve of either the Army or the Navy. Many of the young men seeking to enter the ranks of the airline pilots obtain their training in the Army Flying Schools at Randolph and Kelly Fields. As a return for this training they accept commissions in the Officers Reserve Corps, thus making themselves available for call to their country's defense in time of need. Without the continued training which commercial aviation affords these young men, their flying ability would rapidly disappear and their value as potential military flyers would, of course, cease. While it is true that a national emergency will probably require extensive operations on the part of commercial aviation, there is no doubt that a certain proportion, probably amounting to 20% of the peacetime resources of this great activity, can be utilized in direct aid of National Defense.

In respect to the assistance to military aviation which can be expected from commercial aviation, this country is far more fortunate than any other. The great extent of our country and the intensive development of commercial aviation in the last few years has resulted in producing more facilities of direct aid in defense against air attacks than most countries can boast. It should give the people of the United States, generally, and those engaged in commercial aviation, particularly, a feeling of great satisfaction to reflect that their activities during recent years have been of such great assistance in arriving at a state of preparation which, taken with all other means provided, affords a reasonable assurance that defense against air attack will be forthcoming.

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DETAIL OF OFFICERS AS STUDENTS AT THE AIR CORPS TACTICAL SCHOOL

War Department Orders have been issued relieving the following-named Air Corps officers from assignment and duty at their present stations, assigning them to station at Maxwell Field, Montgomery, Ala., and directing them to report not earlier than August 10, nor later than August 25, 1936, to the Commandant of the Air Corps Tactical School for duty as students in the 1936-1937 course:

From Barksdale Field, La.:
Captain Earl W. Barnes
Captain Joseph G. Hopkins (1st Lieut.) Adjutant, Station Complement.
Captain George McCoy, Jr. (1st Lieut.) 90th Attack Squadron.

From Chanute Field, Rantoul, Ill.:
Captain James S. Stowell
Captain Robert W. Harper

From Bolling Field, D.C.:
Captain William A.R. Robertson (1st Lt.) 14th Bombardment Squadron.

From Langley Field, Hampton, Va.:
Captain Donald F. Fritch
Major Harold H. George (Captain) 8th Pursuit Group.
Major Malcolm S. Lawton (Captain) 49th Bombardment Squadron.
Captain Alva L. Harvey (1st Lieut.) 49th Bombardment Squadron.
Captain Budd J. Peaslee (1st Lieut.) 35th Pursuit Squadron.
Captain Harry E. Wilson (1st Lieut.) 3rd Pursuit Squadron.

From Langley Vield, Va. (Cont'd)
Captain Russell A. Wilson (1st Lieut.) 36th Pursuit Squadron.
Captain Willard A. Wolfinbarger (1st Lt.) 37th Attack Squadron.

From Maxwell Field, Alabama:
Captain John W. Monahan
Major Robert T. Zane (Captain) 54th Bombardment Squadron.
Captain Frank F. Everest, Jr. (1st Lieut.) 51st Attack Squadron.

From Mitchel Field, N.Y.:
Lieut.-Col. Shiras A. Blair (Captain) Station Complement Commander.

From Kelly Field, Texas:
Captain Orvil A. Anderson
Captain Joseph Smith
Captain Wallace E. Whitson
Captain Uzal G. Ent, student at the Advanced Flying School (to report July 1
Major Ulysses G. Jones (Captain) 39th Observation Squadron.
Major John A. Laird, Jr. (Captain) Executive Officer, Advanced Flying School.

From Bowman Field, Ky.:
Captain William W. Welsh, Organized Reserves, 5th Corps Area.

From Scott Field, Ill.:
Major William J. Goldsborough (Captain) 15th Observation Squadron.

From Panama Canal Zone:
Captain Frank H. Robinson (1st Lieut.) 25th Bombardment Squadron.

(Continued on Page 18).

THE NEW CLASS AT THE PRIMARY FLYING SCHOOL

The March, 1936, class at the Primary Flying School at Randolph Field, Texas, consists of 62 students, of whom three are officers of the Regular Army, seven are Air Corps enlisted men, three are enlisted men from other branches of the military service, and the remaining 49 are candidates from civil life. The enlisted and civilian candidates will undergo training under the status of Flying Cadets.

In point of size, the class of March, 1936, is the smallest entering the Air Corps Primary Flying School for quite a number of years. The quota for the March class is 150 but, in view of the small number of candidates qualifying in the prescribed examinations, it has not been possible to secure the allotted quota.

For the information of qualified young men between the ages of 20 and 27, interested in adopting flying as their career and desirous of taking advantage of the course of flying training afforded without expense to them at the Air Corps Training Center, it may be stated that at the present time all candidates who qualify for appointment as Flying Cadet may feel reasonably sure of assignment to the first class following their qualification.

The course at the Primary Flying School is of eight months' duration, of which four months are spent by the student on the Primary Stage and four months on the Basic Stage. The instruction on the Primary Stage is given on a training type airplane, known as the PT, and consists of dual instruction, the fundamental flying maneuvers, accuracy work and acrobatics.

On the Basic Stage, the student advances to a larger, more powerful and speedier type of airplane, known as the BT type. In this plane, and with expert instructors, he now reviews all of the work done on the Primary Stage, but in a ship with different flying qualities and which more nearly approach those of tactical squadrons. At this stage, he also gets formation flying, strange field landings, instrument flying under the hood, and day and night navigation flights. The objects sought so far have been perfection in flying technique and the development of headwork.

The third quarter of the student's scholastic year is spent at the Advanced Flying School at Kelly Field, Texas, where he specializes in either Pursuit, Bombardment, Attack or Observation Aviation, using service type airplanes. In addition to intensive flying training in his own specialty, he is given also considerable experience in day and night navigation, instrument flying, and transition to all types of military airplanes available at the Advanced Flying School.

Upon graduation from the Training Center, the Flying Cadet, now possessing the rating of "Airplane Pilot," is assigned to a tactical squadron at one of the Air Corps stations in the United States for an additional year of duty under his cadet status, upon the completion of which he is commissioned a second lieutenant in the Air Reserve and serves an additional year with a tactical unit, under his status as a Reserve officer. Upon the completion of his active duty as a second lieutenant, the young Reserve officer returns to civil life, retaining his Reserve officer status. He is eligible to take examination for a commission in the Regular Army when and if vacancies exist, and can affiliate himself with local Reserve or National Guard Air Corps units, thus maintaining his flying experience and his military contacts and associations.

Students of the March, 1936, Class:

OFFICERS

INDIANA	2nd Lt. George E. Adams, Field Art.
IOWA	1st Lt. Grant A. Williams, Cavalry
WISCONSIN	1st Lt. James R. Andersen, Ord. Dept.

FLYING CADETS - CIVILIANS

Royal Edison Delp	Los Angeles, Calif.
Frank Allen Kurtz	Los Angeles, Calif.
Gordon Hugh Pierce	Los Angeles, Calif.
Dwight Elmer Herrold	Long Beach, Calif.
Raymond S. St. Clair	Orange, Calif.
Joseph Frederick Hunker	San Diego, Calif.
Donald Waters Macdonald	San Francisco, Calif.
Milton Scott Adair	San Francisco, Calif.
Kay L. Adams	Greeley, Colo.
Harold Ernest Watson	West Hartford, Conn.
Alfred L. Beaver	Washington, D.C.
Oswald Virgil Eifrig	River Forest, Ill.
Albert A. Johnson	Hammond, Ind.
George William Hogg	Fernald, Iowa.
William Klahr McNown	Lawrence, Kans.
Lloyd Henry Delton, Jr.	Ottawa, Kans.
Sam Philippe Triffy	Detroit, Mich.
Russell R. Ostrander	Newberry, Mich.
Jacob Jerval Brogger	Butterfield, Minn.
Henry Oliver Winch	Minneapolis, Minn.
James Marvin Curtis	French Camp, Miss.
Hubert Zemke,	Missoula, Mont.
Earl Young	Sidney, Neb.
Edward Gerald Hillery	Boonton, N.J.
George T. Lyons	Buffalo, N.Y.
Kenneth C. Fuller	North Laurence, N.Y.
David Arnold Tate	Asheville, N.C.
Julian M. Bleyer	Tulsa, Okla.
Robert A. Theobold	Portland, Ore.
James Warren Phelps	Berwyn, Pa.
Sterling George Harvey	Bloomsburg, Pa.
Philip Gerald Cockran	Erie, Pa.
Richard W. Van Reed	Reading, Pa.
James Rembert DuBose, Jr.	Aiken, S.C.
Steele Roy Patterson	Seneca, S.C.
Elbert Helton	Clifton, Texas
Clyde Box	Denton, Texas
Duncan Spence Hughes	Georgetown, Texas
Eugene H. Snavely	Harlingen, Texas
James Mack Humphreys	Houston, Texas
James Duey May	Lubbock, Texas
John Joseph Toudouze	San Antonio, Texas
Gilbert Haven Cady, Jr.	Seattle, Wash.
Clarence A. Gerber	Seattle, Wash.
Norris Perry	Sedro-Woolley, Wash.
William Emanuel Eubank, Jr.	Bluefield, W.Va.
Leslie Eldredge Colby	Viroqua, Wis.
Walter Dillingham	Honolulu, Hawaii

FLYING CADETS - ENLISTED MEN
(All Privates)

Edwin T. Hammond — Carrollton, Ala.
Troop A, 8th Engrs. Ft. McIntosh, Tex.
Joseph A. Kroeck — Burbank, Calif.
73d Attack Squadron, March Field, Calif.

(Continued on Page 19).

Tactical School Details

(Continued from page 16)

From the Philippines

Captain Clinton W. Davies (1st Lieut.) 3rd Pursuit Squadron.

From San Antonio Air Depot, Texas:

Major Robert V. Ignico, Supply Officer, (Captain)

From Randolph Field, Texas:

Major Clyde V. Finter

Major Lloyd N. Keesling

Major James D. Givens (Captain) Basic Stage Commander, Primary Flying School

Major Edward D. Jones (Captain) Engineer Officer, Primary Flying School.

Major Bob E. Nowland (Captain) Principal Stage Commander, Primary Flying School.

Major Paul L. Williams (Captain) Director of Flying Training, Training Center

Captain Harold A. Bartron

Captain James M. Bevans

Captain Francis P. Booker

Captain John R. Hawkins

Captain Edmund C. Lynch

Captain John F. McBlain

Captain David M. Schlatter

From Selfridge Field, Michigan:

Captain Earle E. Partridge

Major George P. Tourtellot (Captain), 17th Pursuit Squadron.

Captain Yantis H. Taylor (1st Lieut.) 94th Pursuit Squadron.

From Wright Field, Dayton, Ohio:

Major Frank D. Hackett (Captain), Chief, Miscellaneous Supply and Maintenance Branch, Field Service Section.

Major Frederick M. Hopkins (Captain), Assistant Commandant, Air Corps Engineer School.

Major David G. Lingle (Captain), Chief, Repair Branch, Engineering Section.

Captain James M. Gillespie

Captain Wallace G. Smith

From Middle River, Maryland:

Captain George W. Polk, Jr., Air Corps Representative at Glenn L. Martin Co.

Of the officers holding temporary increased rank, the majority of them are relieved of such rank, effective August 8, 1936. Major Tourtellot and Captain Taylor, Selfridge Field, relinquish their temporary increased rank August 7; Major Zane and Captain Everest, of Maxwell Field, on August 24th; and Captains Robinson (Panama C.Z.) and Davies (Philippines) on the date of their departure from their respective stations.

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HEAVIER-THAN-AIR TRAINING

Under Special Orders of the War Department, recently issued, nine Air Corps officers are assigned to station at Randolph Field, Texas, and are directed to report to the Commanding General of the Air Corps Training Center for flying training with the class commencing on or about July 1, 1936, viz:

Major Raymond E. O'Neill, student, Air Corps Tactical School, Maxwell Field, Ala.

Major Lester T. Miller

Major Laurence F. Stone

Students at the Army War College, Washington, D.C.

Major Walter J. Reed (Captain), 9th Bombardment Group, Mitchel Field, N.Y.

Captain Howard H. Couch

Captain James F. J. Early

Captain John P. Kirkendall

Wright Field, Dayton, Ohio.

Captain Benjamin B. Cassiday, Randolph Field, Texas.

Major George G. Lundberg (Captain), Supply Officer, Station Complement, Bolling Field, D.C.

Of the officers named above, Captain Couch holds the ratings of Airship Pilot and Balloon Observer, while the other officers hold, in addition to these two ratings, that of Airplane Observer.

Major Reed is relieved from his temporary increased rank, effective June 25, and Major Lundberg, June 26, 1936.

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New Radio Equipment for the Air Corps

(Continued from Page 12)

for every channel guarded and teletype drops for the continuous reception of weather reports will be installed as rapidly as funds become available.

10. It is intended and desirable that the transmitters be operated remote control where feasible. To the end that all installations may be uniform and for efficient use of all apparatus, all of the following should be located in one room, preferably a control tower or room, immediately adjacent to the Post Operations Office, and from which a good view of the flying field may be had:

a. Controls for 400 watt high frequency transmitter.

b. Controls for combination homing, radio range and broadcast stations.

c. Controls for 15 watt airport transmitter.

d. Controls for flood, boundary and obstacle lights.

e. Wind direction and velocity indicators.

f. Station altimeters.

g. Weather teletype machine.

h. All receivers and loud speakers.

i. Telephone to Post Telephone System.

j. Interphone connections to Operations Offices, where necessary.

k. Monitoring equipment for instrument landing system.

l. Logs, forms, files, typewriter, etc.

m. Large chart of all airways converging on the station, so positions of airplanes may be kept.

n. Chart of immediate area (30 miles) of station to control landings and take-offs in inclement weather.

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Captain Harlan W. Holden, Air Corps, who is nearing the completion of 4 years of duty in the Office of the Chief of the Air Corps, is under orders to enter the next class at the Air Corps Tactical School.

New Class at Randolph Field

(Continued from Page 17)

Wallace Embry Nau Pasadena, Calif.
Station Complement, March Field, Calif.
Leslie M. Greene Denver, Colo.
Primary Flying School Det.,Randolph Field.
John Homer Taylor Denver, Colo.
47th School Squadron, Randolph Field.
Henry G. Thorne Ft. McPherson, Ga.
79th Pursuit Squadron, Barksdale Field,Da.
Jack G. Gregg Jerome, Idaho
Co. I, 38th Inf., Fort Douglas, Utah
Thomas Ewing Margrave Gordon, Nebr.
17th Inf. Service Co., Fort Crook, Neb.
Aaron H. Hoffeditz Greencastle, Pa.
Panama Air Depot, France Field, Canal Zone
Harold J. Rau Shavertown, Pa.
79th Pursuit Squadron, Barksdale Field,La.

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OBITUARIES

General William Mitchell

The sudden and unexpected death of William Mitchell, former Brigadier-General of the United States Army, on the afternoon of February 19, 1936, was a matter of keen regret to all who knew him personally or by reputation. In the untimely departure of this former officer, whose energetic qualities and forceful and dynamic personality were admired by all, despite whatever differences of opinion they may have entertained, aviation has suffered the loss of one of its staunchest advocates. He occupied a unique position in aviation which no one else can fill.

On the day following General Mitchell's death, the House Military Affairs Committee adopted resolutions of regret, as follows:

"Whereas the Committee on Military Affairs of theHouse of Representatives has learned of the death of Brig. Gen. William Mitchell, United States Army, resigned, in New York City, on February 19 1936, at 4:45 p.m., and, whereas the said General Nitchell has appeared before this committee on numerous occasions since the World War and has always manifested an unselfish zeal for the cause of national defense, and whereas the said General Mitchell has courageously and patriotically championed the building up of an adequate air force as a most effective and most economical means for promoting the national defense: Now, therefore, be it

Resolved by the Committee on Military Affairs of the House of Representatives, That we record our admiration for the valorous and heroic services of the said General Mitchell rendered to the Army and to the country, in peace and in war, and that we acknowledge our obligation of gratitude to him for unselfishly and vigorously provoking the thought and action of the American people to build up an adequate air force for the defense of the country; be it

Further resolved, That in the death of General Mitchell the nation has lost a farseeing and constructive leader of civic opinion with reference to a safe and sane program of national defense; be it

Further resolved, That these resolutions be spread upon the minutes of this committee as a memorial of our respect and esteem for the distinguished public service of General Mitchell, and that the Chairman of this committee ask permission of the House of Representatives to extend his remarks upon the life and character of General Mitchell, and to include these resolutions therein, and that a copy of these resolutions, duly certified, be transmitted to the widow of General Mitchell as a testimonial of our sympathy with her in her sorrow.

John J. McSwain, Chairman,
Andrew J. May,
Charles A. Plumley,
Committee."

In offering the above resolutions for publication in the Congressional Record, Mr. John J. McSwain, Chairman of the House Military Affairs Committee, reviewed the career of the former Chief of Air Service, First Army, A.E.F., from which the following excerpts are quoted:

"The brilliant and glorious career of General Mitchell as an officer of the United States Army is the proud possession of all our people. Commissioned at the age of 18, at the outbreak of the Spanish-American War, he progressed by rapid strides by reason of his conspicuously efficient discharge of every responsibility placed upon him. * * I call especial attention to the fact that his citation, on which is based the award of a Distinguished Service Cross, is not for a single act of extraordinary heroism in the face of the enemy, but it is for 'repeated acts of extraordinary heroism in action at Noyon, France, March 26, 1918; near the Marne River, France, during July, 1918; and in the St. Mihiel salient, France, September 12 to 16,1918. For displaying bravery far beyond that required by his position as Chief of Air Service, First Army, American Expeditionary Forces, setting a personal example to United States aviation by piloting his plane over the battle lines since the entry of the United States into the War.

"Mr. Speaker, any soldier may well be proud, exceedingly proud, of being awarded the Distinguished Service Cross, even for a single act of extraordinary heroism in the face of the enemy. But for 'repeated acts of heroism', extending through months of daring and dangerous activity, in airplanes by no means too safe and stable, over enemy lines with superior air force, locating strategic and vulnerable enemy positions, and taking back information of incalculable value to the ground forces, it is a combination of daring and heroic conduct unrivaled in military history. The friends of General Mitchell take great pride in his splendid career, all his relatives may properly prize the record of his service as a precious heritage, and his disconsolate widow and orphaned children may find some solace and supreme satisfaction that their names and their lives are forever linked with a man who always put his country's cause first."

Captain Karl G. E. Gimmler

While engaged in aerial gunnery practice at Barksdale Field, Shreveport, La., on February 26th, last, Captain Karl G.E. Gimmler, Air Corps, piloting a Pursuit airplane, failed to come out of a dive toward a target and crashed to his death. Stationed at Selfridge Field, Mt. Clemens, Mich., where he was on duty with the 27th Pursuit Squadron as Flight Commander, Captain Gimmler, with other personnel from that station, had flown to Barksdale Field for the purpose of participating in aerial gunnery practice.

Captain Gimmler was born in Milwaukee, Wis., March 27, 1906. He graduated from the United States Military Academy, West Point, N.Y., in June, 1928; was commissioned a second lieutenant of Field Artillery, and detailed to the Air Corps for flying training. He successfully completed the primary and advanced flying courses, specializing in Pursuit Aviation, and graduating on February 15, 1930. Fort Crockett Texas, was his first station of duty as an Air Corps officer, and he served thereat until October, 1931, when he was detailed as a student in the Maintenance Engineering Course at the Air Corps Technical School at Chanute Field, Rantoul, Ill., from which he graduated in June, 1932, with the rating of 'Excellent."

Captain Gimmler was next assigned to duty with the First Pursuit Group at Selfridge Field. He was promoted to 1st Lieutenant, March 1, 1934, and, by virtue of his duty as Flight Commander with the 27th Pursuit Squadron, was promoted to Captain (temporary) as of April 20, 1935.

While stationed at Fort Crockett, and during the course of a formation training flight to Kelly Field, Captain Gimmler, in company with Corporal Frank J. Sirovic, his mechanic, joined the mythical Caterpillar Club, July 15, 1930, both taking to their parachutes when the elevators of the airplane jammed, a safe landing of the plane being out of the question.

Captain Gimmler was the winner of the Mitchell Trophy Race, held at Selfridge Field on October 19, 1935, when, in a field of ten contestants, he piloted his Boeing P-26A airplane into first place by attaining an average speed of 212.596 miles per hour over a 100-mile course.

Fate plays rather strange tricks at times, since the donor of the Mitchell Trophy (Gen. William Mitchell) and the latest winner of this Trophy died within a week of each other.

Captain Gimmler is survived by his widow, two daughters and a son, the oldest child being 4½ years of age. The heartfelt sympathy of the Air Corps is extended to his bereaved family.

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Captain Lawrence C. Westley, A. C.

Flying in the vicinity of Sourlake, Texas, on February 18, 1936, Captain Lawrence C. Westley, Air Corps, apparently delayed too long in jumping with his parachute when his plane became disabled, and he lost his life in the crash which followed. His mechanic, Sgt. W.J. Kliffel, jumped from the plane at an altitude of about 500 feet, and his parachute eased him down to safety.

Captain Westley was born at Clifton, Texas, October 20, 1902. He attended Clifton College for one year and the Texas A. & M. College for three years, graduating from the latter institution in 1928 with the degree of B.S. in Electrical Engineering. Appointed a Flying Cadet, he graduated from the Primary Flying School, March Field, Calif., in October, 1929, and from the Advanced Flying School, Kelly Field, Texas, in February, 1930, specializing in Attack Aviation, and being rated "Airplane Pilot" as of February 15, 1930. Under his commission as a second lieutenant in the Air Reserve, he was assigned to active duty with the 90th Attack Squadron at Fort Crockett, Texas. Passing the prescribed examination for appointment in the Regular Army, he was commissioned a second lieutenant in the Air Corps, with rank from May 8, 1930, and retained on duty at Fort Crockett.

On November 22, 1930, Captain Westley won the General Mason M. Patrick Trophy Race, held at Fort Crockett, and confined to members of the Third Attack Group, when he piloted his Attack plane over a 60-mile course at an average speed of 149.2 miles per hour.

Assigned to duty at Chanute Field in June, 1931, Captain Westley pursued the Communications Course at the Air Corps Technical School at that station, graduating in June, 1932, with the rating of "Superior." He then rejoined the 3rd Attack Group at Fort Crockett, and moved with it to its new station at Barksdale Field, La., in March, 1935.

Captain Westley is survived by his widow, whom he married in December, 1935, and to whom the sincere sympathy of the Air Corps is extended in her bereavement.

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WAR DEPARTMENT ORDERS AFFECTING A.C. OFFICERS

CHANGES OF STATION: To Boston, Mass.: Lieut.-Col. John N. Reynolds, Maxwell Field, to duty at Hqrs. 1st Corps Area.

To Office of the Chief of the Air Corps, Washington, D.C.: Major Lynwood B. Jacobs, from Aberdeen Proving Ground, Md.

To Aberdeen Proving Ground, Md.: Captain Dudley W. Watkins, from Wright Field, Ohio.

To Wright Field, Dayton, O: Captain Daniel C. Doubleday (1st Lieut.) 27th Pursuit Squadron, Selfridge Field. Relieved from temporary rank March 31, 1936.

To Mitchel Field, N.Y.: Major Thomas J. Hanley from Fort Leavenworth, Kansas, July 31, 1936, for duty with station complement.

To Maxwell Field, Ala.: Captain Charles Backes, from duty as Instructor, Air Corps, Ohio National Guard, Cleveland, to duty as student at Air Corps Tactical School.

To Kelly Field, Texas: Lieut.-Colonel Arnold N. Krogstad, for duty as Commandant, Air Corps Advanced Flying School, from Office of the Chief of the Air Corps. Previous orders in his case amended.

TRANSFER: 2nd Lieut. Marshall Bonner, C.E., to the Air Corps, February 5, 1936, with rank from June 13, 1933.

Air-Corps
News Letter

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D. C.

VOL. XIX MAR. 15. 1936 NO. 6

VOL. XIX AIR CORPS NEWS LETTER NO. 6.
Information Division Munitions Building.
Air Corps March 15, 1936 Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE PERSONNEL REQUIREMENTS OF AIR DEFENSE

The commissioned and enlisted strengths of the Air Corps were fixed in the National Defense Act of 1920, and amended by the "Air Corps Act" of July 2, 1926. The latter Act increased the personnel strength of the Air Corps, as set by the former, as it was recognized that the increase in the size and complexity of aircraft, which had occurred between 1920 and 1926, required more men for their operation and maintenance.

This increase in size and amount of equipment of airplanes has continued since 1926, and at an even greater rate than in the preceding period. During this same time the improvement in performance has enlarged the field of employment of airplanes, with the result that more of them are required to perform the added missions they are now capable of accomplishing. This need for more airplanes was recognized by both the "Drum Board" of 1933 and the Baker Board of 1934, each of which set a goal of 2320 airplanes; a substantial increase over the existing legal limit of 1800 serviceable airplanes, as established by the Air Corps Act of 1926.

From discussions in the Congress, in connection with appropriations for the Army, it appears probable that the Congress is in accord with the Baker Board recommendations and intends to provide, ultimately, 2320 airplanes for the Army Air Corps. Part of increase will be accomplished when all the airplanes are delivered that are being bought with the funds now appropriated, and soon to be available under the War Department Appropriation Bill for the F.Y. 1937. This increase in the number of airplanes introduces the second important factor in the creation of a requirement for more Air Corps personnel.

The third and probably most important factor of all, is the general recognition now, throughout the War Department and in the Congress, that the Air Force of the Army must be maintained at all times upon a war footing, if it is to be effective in carrying out its mission. It is apparent that the time factor involved for an enemy to launch an air attack against us is, relatively, so small compared with the time that would be required to bring an army against us, that our Air Force must be ready at all times to fight.

Such a position of "readiness for action" involves a greatly increased personnel requirement. It is one thing to operate airplanes at Regular Army stations upon a basis of peace time training, and quite another, and larger, order to operate the same, and probably an increased, number of airplanes in the field on the basis of the intensive operations demanded by war.

To do the latter requires enough trained personnel to improvise in the field all or most, of the operating facilities found at a Regular Army Air Corps station; enough to operate the airplanes upon a basis of at least a trebled number of hours of flying; and enough to carry on the greatly increased burden of supply and training of replacements. Summarizing, we have, then, three important factors operating to create a requirement for more Air Corps personnel.

First - a great increase in the size of airplanes and in the amount of their equipment.
Second - a considerable increase in the number of airplanes to be provided under the completed program.
Third - the maintenance of our Air Force in a state of constant readiness for field service.

The last of the above factors applies at the present moment in its full force, and the extent of the requirement it sets up has been under study in the War Department, in the Office of the Chief of the Air Corps, and at the GHQ Air Force Headquarters for more than a year. The force of the first of the three factors summarized above has been felt for a long time. Its effect is, therefore, cumulative. Furthermore, it will be a continually increasing factor, since the trend at the present moment, both here and abroad, is toward still larger and more completely equipped military - as well as commercial - airplanes.

The second factor, that is, the program for an increased number of airplanes in our Army Air Corps is being realized day by day, through the delivery of the airplanes now being fabricated; and by the formulation of plans for the purchase of a considerable additional number. This number is placed at 565, under the present W.D. appropriation for the F.Y. 1937, beginning July 1, 1936.

Our Air Corps personnel authorization still stands at the number set by Congress on July 2, 1926, and the actual personnel in service is below the authorized numbers. We are face to face with the need for bringing this vital part of our Air Defense program up to requirements. To obtain the maximum benefit from the new and better airplanes we are buying, and are about to buy, it is desirable to secure, train and have ready the additional personnel required to operate and maintain them when they are received. To place our Air Force upon a basis of constant readiness for defense, it is believed we should also secure and train the additional personnel required for the intensive operation of our Air Force in the field in time of national emergency.

It is probably not essential that all this latter personnel should be assigned as Air Corps personnel. Many of the ground duties which must be performed to support active air operations in the field pertain to the special fields of other branches of the Army. Ground communications can be handled by Signal Corps personnel and bomb and ammunition supply by Ordnance and Service of Supply personnel. Airdrome construction is in the line of the duties assigned to Engineer Corps personnel. The men of any branch can be quickly taught the duties of observers in the Aircraft Warning Service.

However it is essential that the personnel we will require to perform all these duties for the Air Force when it takes the field at the first attack against us, shall be assigned to these duties and trained for them in time of peace. We have no enlisted reserve for the Air Corps and the present authorized enlisted strength of 16,500 amounts to just over, and the actual enlisted strength of 15,545 amounts to less than 7 men to each of 2320 airplanes. In the World War we used approximately 35 enlisted men per airplane. Considering published data applying to Great Britain, France and Italy, it is found that they have in the active air forces approximately 11.5 men per airplane. The data for these countries is far from complete, no doubt, and it is fairly certain that many of the airplanes used to arrive at the figure of 11.5 are in reserve.

The important consideration, however, in making a comparison between these countries and our own is the great difference in the geographic situations. Each of these European countries has its aircraft warning system, including observation posts and ground communications in actual operation at all times. The men of this service are not charged to the air forces. Each of them has its permanent peace-time airdromes in the locations from which their air forces will operate in a defensive war. In our case we cannot expect more than one of our permanent Air Corps stations to be in the active theater of operations which will develop in a defensive war. This means that we must operate most of our air forces from bases which will have to be developed after the war opens, with the result that more men will be required. These European countries have their air force supplies, including gasoline, oil, bombs, and ammunition, right at the places where they will be needed in a defensive war. We must transport ours over long distances to improvised dumps and storage.

These important differences in our situation and theirs prevents any direct comparison between the number of men we should have assigned per airplane and those European countries have, who are charged to their air forces. On the other hand, these very differences emphasize the disparity in readiness for action between the leading powers of Europe and the United States, in so far as personnel for air defense is concerned. It is true that the same, or a greater disparity, is found when the ground armies are compared. However, as was pointed out earlier in this article, in a defensive war our ground armies will have a great deal more time than the Air Force to prepare for battle. The GHQ Air Force should be ALWAYS READY FOR DEFENSE.

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SEPARATE PROMOTION LIST FOR THE AIR CORPS

The Hon. John J. McSwain, M.C., Chairman of the Committee on Military Affairs, House of Representatives, introduced in that body of Congress on March 11, 1936 (by request) H.R.11743, A Bill to promote national defense by creating a separate promotion list for Air Corps officers in the United States Army, viz:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there is hereby created a separate promotion list of commissioned officers of the United States Army Air Corps, which shall include all officers assigned to the Army Air Corps; the names on this list shall be arranged in the same relative order that they now have on the Army promotion list provided for in section 24a of the Act of June 4, 1920 (U.S.C., title 10, sec. 553; 41 Stat. 771), and the names of said officers shall be removed from the Army promotion list: Provided, That nothing in this Act shall be so construed as to change the respective relative positions of Air Corps officers on the Air Corps separate promotion list from the relative position previously held by these officers on the Army promotion list: And provided further, That the method of determining the position of officers on the Air Corps separate promotion list shall be the same as that prescribed for the Army promotion list by the Act of June 4, 1920, as amended.

All promotions provided for in this Act shall be subject to the examination prescribed by existing law.

Sec. 2. That from and after the effective date of this Act, the authorized number of Air Corps officers in the grade of colonel shall be 3 per centum; the number of such officers in the grade of lieutenant colonel shall be 4 per centum; that the number of such officers in the grade of major shall be 15 per centum of the aggregate number of Air Corps officers authorized by law: Provided, That in making any computation under the provisions of this section whenever a final fraction of one-half or more occurs in the number of officers involved in any such computation the next higher whole number of officers shall be regarded as the authorized or required number thereof.

Sec. 3. All vacancies, including original vacancies resulting from the operation of section 2 hereof, occurring on or after July 1, 1936, in the respective grades of colonel, lieutenant colonel, and major shall be filled by the promotion of Air Corps officers in the manner provided in section 24c of the said Act of June 4, 1920: Provided, That all officers promoted under the provisions of this paragraph shall take rank in the grade to which promoted according to the dates stated in their commissions in said grade; and when the dates of rank of two or more officers in said grade are the same, such officers shall take rank among themselves according to their standing on the Air Corps promotion list.

The number of Air Corps officers that shall be in the respective grades of captain and first lieutenant at any time after the effective date of this Act shall be such as results from the operation of the promotion system hereinafter in this paragraph prescribed. Air Corps second lieutenants and first lieutenants shall be promoted to the respective grades of first lieutenant and captain immediately upon completing respectively three years' and eight years' commissioned service in the Regular Army, but not otherwise: Provided, That no Air Corps officer shall be promoted, under the provisions of this paragraph, in advance of any Air Corps officer in the same grade whose name appears above his on the Air Corps promotion list.

Sec. 4. That from and after the effective date of this Act, the number of general officers of the line of the Army is hereby increased by three major generals and six brigadier generals; and that hereafter one additional brigadier general of the line shall be authorized for each additional wing of the Army Air Corps organized: Provided, That the additional general officers of the line authorized by this Act shall be flying officers.

Sec. 5. That from and after the effective date of this Act there shall be one Chief of the Air Corps with the rank of major general and one assistant with the rank of brigadier general: Provided, That the Chief of the Air Corps and the Assistant Chief of the Air Corps shall be flying officers.

Sec. 6. This Act shall be effective the first of the month following the date of enactment of this Act, and all laws and parts of laws, insofar as they are inconsistent with or in conflict with any of the provisions hereof, are hereby repealed as of that date."

This bill was referred to the House Military Affairs Committee.

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GENERAL CHANEY REPRESENTS MARYLAND AND ITS EXECUTIVE AT CENTENNIAL EXERCISES

At the Centennial Exercises in San Antonio, Texas, on March 6, 1936, commemorating the one hundredth anniversary of the Battle of the Alamo, General James E. Chaney, Air Corps, commanding the Air Corps Training Center, represented the Governor of Maryland and presented Maryland's flag to Governor Allred, of Texas, who accepted it on behalf of the Alamo.

Maryland was represented among the one hundred and eighty-one defenders of the Alamo who fought until the last man was killed. In presenting the flag, General Chaney stated: "In behalf of Maryland and its Governor, the Honorable Harry W. Nice, I have the honor to present this flag as a symbol of our admiration for the bravery and courage of the immortal heroes of the Alamo."

Governor McAlister, of Tennessee, representatives of England, Scotland, Ireland, and Germany, and other state officials participated in the exercises.

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Lieut. J.P. Stewart, Assistant Communications Officer, 50th Observation Squadron, Luke Field, T.H., is still working on the radio beacon which he hopes may be of use in helping pilots of this organization to gain the necessary training in beacon flying. The main trouble with this gadget so far is getting an antenna that will load up properly. However, Lieut. Stewart is a radio man, and radio men are known for their tenacity.

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Major William O. Ryan, Air Corps, was promoted to Lieut.-Colonel, with rank from February 1, 1936.

NATIONAL PLAN FOR AIR MARKERS

Describing his nation-wide plan for markers in the National Aeronautic Magazine for March, Mr. R.G. Parker, chief of the air marking division of the Illinois Aeronautics Commission, states that to "air mark" the United States so that airmen need never be lost for more than a few minutes during clear weather would require only 5,619 air markers, or an average of 117 per State.

Aviators everywhere will thank Mr. Parker for designing what he calls "sky-Hiway Trail Markers," for they are composed of enormous words, and the name of the town usually stretches out for a city block in length. Letters are twenty feet wide by twenty-six feet high and spaced eight feet apart. The average length of an air marker of this type is 275 feet, but the names of cities can be seen clearly by airmen flying 5,000 feet and higher. They are constructed out of broken paving block, brickbats and other waste material, but the material is painted white to make it visible.

The Illinois director is seeking to line up other States in a concerted air-marking drive through the National Aeronautic Association and with the full co-operation of the Bureau of Air Commerce. He says that the labor cost is only $125 per marker when relief labor is used, and that the whole national program would cost about $702,000. Works Progress funds would be used. The specifications for the markers have been copyrighted and registered to prevent commercial use by advertisers.

According to his State-by-State analysis, New York State needs 250 markers to be properly designated from the air, while Wyoming only needs thirty, Alabama 150 and Indiana, 150. Illinois launched its program two years ago and has most of its communities well marked.

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CAPTAIN STEVENS GUEST SPEAKER

Captain Albert W. Stevens, Air Corps, was the guest speaker at the annual banquet of the Engineers Society of Pennsylvania at Harrisburg, Pa., on the evening of March 4th. Honorary membership in The Engineers Society of Pennsylvania was conferred upon Captain Robert A. Bartlett, Arctic Explorer, an honored guests.

Among the listening guests were The Adjutant General, Frederick B. Kerr; Major-General Edward C. Shannon, Commander of the 28th Penna. National Guard; Brig.-General Edward J. Stackpole, Jr., Commander of the 52nd Cavalry Brigade, Penna. National Guard, and Lieut. Camille Vinet, Chief of Bureau of Aeronautics, Penna. Dept. of Revenue.

Among the items on the menu were Registered Turkey, B.S.; Test Pit Olives; Stratosphere Potatoes, Depression Sprouts; Cranberry Logs; Biscuit Engineers and Highways Cake.

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MASS FERRY FLIGHT SUCCESSFULLY COMPLETED

The largest mass flight of U.S. Army planes made to a possession beyond the continental limits of this country was successfully completed on February 28th, with the arrival in the Panama Canal Zone of 12 P-12 Pursuit planes and 11 B-6 Keystone Bombers. A minor mishap to one of the P-12's (leaking main gas tank) delayed its arrival in Panama one day.

Prior to the Panama flight, all of these 24 planes had been in use by Air Corps organizations at Langley Field, Va. They were transferred to Panama to replace unserviceable aircraft, and were ferried by Air Corps pilots on duty in the Panama Canal Department. The only officer participating in the flight stationed elsewhere was Major Malcolm C. Grow, Medical Corps, Flight Surgeon.

The Air Corps personnel made the journey from Panama to New York by army transport, and were then flown to Langley Field.

Taking off from Langley Field on February 11th, the planes were flown, via Atlanta, Ga., to San Antonio, Texas, where the Bombers were given a thorough check by personnel of the San Antonio Air Depot.

The flight of 13 Pursuit planes was led by Lieut.-Colonel Charles T. Phillips, and the flight of 11 Bombers by Lieut.-Colonel Junius H. Houghton.

Departing from Randolph Field, Texas, at 11:30 a.m., February 21st, the first stop was made at Brownsville, Texas. On the following day, at 9:46 a.m., the two flights took off from the Brownsville airport for Tampico, Mexico, only to return shortly thereafter due to unfavorable weather conditions encountered. Another take-off was made at 1:15 p.m. Tampico was reached in due time, and February 23d found the Army airmen in Vera Cruz, Mexico, the Pursuit planes arriving there at 11:45 a.m., and the Bombers at 1:10 p.m. Due to lack of accommodations for all of the personnel and the necessity for extra service for the Pursuit planes, the Bombers remained overnight at Vera Cruz and the Pursuit at Minatitlan.

The next overnight stop was at Guatemala City, Guatemala, the Pursuiters arriving at 2:00 p.m., February 24th, and the Bombers at 3:35 p.m. Stops were also made at Managua and at San Jose, Costa Rica.

Piloting the P-12 Pursuit planes, in adtion to Lieut.-Colonel Phillips, were Lieut.-Colonel Donald P. Muse, Majors Frank O'D. Hunter, Burton M. Hovey, Jr., Guy B. Henderson, Captains Charles A. Ros Joel E. Mallory, William E. Hall, David D. Graves, Joseph H. Atkinson, Roland R. Walker, Leo W. DeRosier and 1st Lieut. Edward W. Anderson. These planes were assigned to Albrook Field, Canal Zone.

The pilots and co-pilots of the B-6 Keystone Bombers were, in addition to Lieut.-Col. Houghton, Majors Willis R. Taylor, Malcolm C. Grow, Captains Donald W. Benner, Elmer P. Rose, Otto C. George, Neil B. Harding, George C. Macnair, James H. Wallace, Allen W.Reed, Herbert E. Rice, Ward J. Davies, John F. Guillett, Thayer S. Olds, James W.Brown, Jr., Clarence T. Mower, 1st Lieuts. James W. McCauley, Robin B. Epler, George G. Northrup, Lawrence B. Kelley and P. Ernest Gabel.

The enlisted mechanics, all of whom were assigned to the Bombing planes, were Technical Sergeant Vernon Mick, Staff Sergeants Harry A. Terrell,George D. Malkemus, Elmer H. Meyer, Ross P. Holland, Roby C. Davis, Richard W. Davenport, Elmer L. Hill, Clark H. Curtis, Sergeants Walter A. Jackle, Harry P. Jones, George Russell, Harry McHayes, Henry T. Swanson, John B. Stewart, Frank Bayne, Corporal Clyde E. Gilmore, Private 1st Class George T. Baker, Privates Christopher J. Davis, Robert P. Stewart, George R. Brownsworth and Edward F. Brown.

The Bombardment planes were assigned to France Field, Panama Canal Zone.

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GUNNERY PRACTICE AT BARKSDALE FIELD

Pilots of the 1st Pursuit Group, Selfridge Field, Mt. Clemens, Mich.,participating in aerial gunnery practice on ground targets at Barksdale Field, Shreveport, La., continue to arrive and depart. As soon as those officers firing have completed practice, they return to the home station, and others are ordered to Barksdale Field for practice. It is expected that the gunnery practice of members of the 1st Pursuit Group will be completed about April 15, 1936.

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SELFRIDGE FIELD HAS CANADIAN VISITORS

Forty members of the Essex Scotish Regiment from Windsor, Ontario, Canada, were guests of the noncommissioned officers of Selfridge Field, Mich., on February 22nd. Major Ernest Clark,commanding Selfridge Field, welcomed the visitors to the post on their arrival. Captain Brown, representing the Commanding Officer of the Regiment, and Regimental Sergeant Major Parker, each gave a short address before the assemblage. The visitors made the occasion most enjoyable by furnishing bagpipe music.

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Captain Leon E. Sharon, Air Corps, is under orders to report to the Commandant of the Air Corps Tactical School,Maxwell Field, Ala., for duty on the staff and faculty, upon completion of his present course of instruction at this school.

MORE AERIAL SEED SOWING IN HAWAII

Four airplanes from the 23rd Bombardment Squadron, Luke Field, T.H., were utilized in sowing seeds of the Haole Kao, or white Hawaiian mahogany tree, over eroded areas on the Island of Oahu on January 20th and 23rd, last. Mr. G.S. Judd, Territorial Forester, furnished 2,000 pounds of seed that was divided among the four airplanes.

Major A.G. Liggett and Lieut. M. S. Summerfelt scattered half the seed along the southern slope of the ridge which separates Waimanalo and Kaapa Pond, near Koko Head. Lieuts. B.A.Bunch and J.G. Armstrong scattered the remainder of the seed over a pocket in the Waianae Mountains near Kepuhi Point and Barking Sands. An area of over seven square miles was covered in about half an hour.

The Air Corps has dropped seed in this manner before with excellent results,so the present project had the whole-hearted approval of General James B. Gowen, Acting Commander of the Hawaiian Department.

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TC-14 AIRSHIP IN TEST FLIGHT

The TC-14 Airship at Scott Field, Belleville, Ill., was flown in a test flight on February 28th with its third motor, a 100 horsepower pusher type, in operation. Although no effort was made to reach the maximum speed on this flight, the Scott Field Correspondent says that it is estimated that the airship, with all three motors, will reach a speed in excess of 85 miles an hour.

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PURSUITERS RETURN FROM WINTER MANEUVERS

The three officers and 30 enlisted men from the First Pursuit Group, Selfridge Field, Mt. Clemens, Mich., who departed from that station on January 31st to participate in the Winter Test Maneuvers of the GHQ Air Force at Burlington, Vt., returned to their home station on February 20th.

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LANGLEY BOMBERS FOR WINTER MANEUVERS

On January 31st, nine B-10B airplanes, furnished by the 20th, 49th and 96th Bombardment Squadrons, Langley Field, Va., proceeded to Concord, N.H., to participate in Winter Test Maneuvers. Twenty officers and 75 enlisted men were assigned to this flight. The missions during these maneuvers consisted of high altitude endurance tests and attacks on Burlington, Vt.; Mitchel Field, N.Y.; Boston, Mass., and Portland, Maine.

On February 18th, twelve N-10B planes departed for Mitchel Field for the purpose of ferrying enlisted men back to Langley.

FIRST ANNIVERSARY OF THE GHQ AIR FORCE

Prior to March 1, 1935, all Air Corps units in the United States were under the direct control of the Corps Area Commanders in whose territory the units were stationed. Under this system it was impracticable to secure coordinated thought leading to effective training for combat. And combat is the only reason for the existence of any Air Force. On several occasions in thepast when Air Corps maneuvers were held, it was necessary to appoint a commanderand improvise his staff to conduct the exercises. It became increasingly evident that improvisation of command echelons on the spur of the moment was not conducive to efficiency.

The creation of the GHQ Air Force, under an Air Corps Commander for the first time in the United States, brought together the combat air units and provided the machinery for effective coordinated training in peace and combat in war.

Several noteworthy accomplishments form a record of the GHQ Air Force during the first year of its existence. The average monthly flying time per GHQ Air Force airplane and per pilot during the past year has been materially increased. In spite of this additional flying, the percentage of aircraft continually in commission has risen. Whereas on March 1, 1935, but 9% of pilots assigned to the GHQ Air Force were qualified instrument flyers, on February 1, 1936, 84.6% of all pilots have been qualified to fly by instruments. It is expected that this high average will be maintained or even bettered by constant practice and periodic tests.

Realizing that future combat operations of the GHQ Air Force in the defense of the United States will require long flights over the ocean out of sight of land, it was decided to stress training in aerial navigation both by dead reckoning and by celestial observation without the use of known reference points. This training has been materially impeded through lack of airplanes and instruments suitable for the purpose, but considerable progress has been made as evidenced by many flights made on both coasts to considerable distances out of sight of land or vessels.

Upon the creation of the GHQ Air Force, everyone of its units proved by actual inspection and tests to be seriously deficient in aerial bombing and gunnery, which in the final analysis is the only reason for the existence of the Army Air Corps. Along with navigation, bombing and gunnery have been stressed, and it is gratifying to note that combat proficiency has been more than doubled.

During the past year numerous field exercises or maneuvers have been held. In the belief that training should progress in an orderly manner from lesser to greater undertakings, the exercises held progressed from squadron to group, and then to wing exercises. It was possible to hold only one exercise in which all three wings of the GHQ Air Force were involved, namely, the one in Southern Florida from December 1st to December 15, 1935. Even this exercise was on a very modest scale, due to the fact that the numbers of modern tactical airplanes assigned to the GHQ Air Force numbered only about 165. This exercise was primarily designed as a test of Air Corps communications and to learn from actual experience just what was needed in the way of equipment, personnel and training to set up and operate the system of communications so vital to the efficient functioning of an Air Force. Advantage was also taken of the opportunity to determine the length of time required to concentrate the GHQ Air Force from one coast to the other. From the moment the "go-ahead" was given until the last unit was on the airdrome, in Southern Florida, required but twenty-two hours and fifty minutes elapsed time. Units from California, Michigan, Louisiana and Virginia participated.

Another interesting exercise involved two wings. About sixty airplanes concentrated in New England in February, 1936, for exercises under conditions of extreme cold. Daily operations for two weeks took place with the GHQ Air Force station, Mitchel Field, Long Island, as a base, and with operating airdromes at Concord, New Hampshire, and Burlington, Vermont. Many valuable lessons concerning cold weather operations were learned.

The concept of the GHQ Air Force is a force ready at all times to undertake combat operations immediately upon the outbreak of war. Its operations in the defense of the United States will be of more importance and more decisive during the early phases of an attempted invasion, than at any later time. The War Department has wisely got for the GHQ Air Force objective a unit trained, supplied and equipped in time of peace to be ready for operations immediately upon the outbreak of war. To meet the standards set will require a long time. Whereas the "Baker Committee" recommended 980 airplanes for the GHQ Air Force, its strength in tactical airplanes, both modern and suitable as to type, on January 1, 1936, was 174, including those in depot overhaul. In addition there were assigned 181 unsuitable obsolescent tactical airplanes and 57 transports and training airplanes. Although the numbers of modern and suitable tactical airplanes are now being increased by deliveries of new airplanes ordered from the factories many months ago, it wi be years at the present rate before the objective of 980 can be reached.

Accompanying the shortages in airplanes, there are serious shortages in personnel, funds for field exercises and maneuvers, necessary equipment, air bases, and depot repair facilities.

In resume on this its first birthday, the GHQ Air Force has made marked strides in spite of handicaps. Many nations abroad have embarked on programs of tremendous expansion in the air, but none of them surpasses the United States Army GHQ Air Force in the high quality of its personnel, airplanes, and accessory equipment. With continued public support, after a few more birthdays, it should reach such a state of vigorous maturity as to form a strong deterrent to any nation contemplating an attack on the United States. It should prove itself a powerful element in our National Defense should war, nevertheless, unhappily ensue.

The creation, maintenance, and training for combat of even the small Air Force deemed necessary for the air defense of the United States, is a tremendous undertaking, and one which will require much concentrated thought, study and financial support to complete. The creation of the GHQ Air Force under one head constitutes the greatest forward step that has been made in national defense in this country since the World War. It could not have been expected that such an organization could be perfect from the beginning, and many details need readjustment. As required by the directive which created the GHQ Air Force, recommendations based on the experience gained to date have been submitted to the War Department, and are now being studied by the War Department General Staff.

The greatest single national defense need to make effective the nation's first line of defense, the GHQ Air Force, is a balanced program of airplanes, personnel, equipment, bases, and repair facilities.

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NEW CLASS REPORTS FOR TRAINING AT KELLY FIELD

The new class of students reported to the Advanced Flying School, Kelly Field, Texas, on February 21st. These students arrived a few days earlier than usual, in order to make room at Randolph Field for the new class.

After spending the first few days in getting settled, the class began ground school on Thursday, February 27th. Flying training was scheduled to begin on Monday, March 2nd, but poor flying weather caused the postponement of their first flights until Thursday, March 5th.

This class consists of 9 officers and 52 Flying Cadets, who arrived from Randolph Field, and 2 Flying Cadets who were held over from the last class at the Advanced Flying School. Assignments to specialized training were made as follows: Attack, 9 Flying Cadets; Bombardment, 4 officers and 24 Flying Cadets; Observation, 5 officers and 9 Flying Cadets; Pursuit, 12 Flying Cadets.

A course in the preparation, rendition and purpose of efficiency reports has been added to the ground school curriculum, and check flights on instrument flying added to that course.

In the approximately $3\frac{1}{2}$ months allowed to train this class, they will spend at least 150 hours in classrooms at ground school and 135 hours in the air. This does not include, of course, time spent on drill, inspection, supervised athletics, practical instruction in the organizations, or the ground instruction given by each training section.

This class is scheduled to graduate during the latter half of June, 1936.

The 9 Flying Cadets assigned to the Attack Section are enumerated, as follows:

Converse, Lawrence F.
Mears, Frank H.
Cullerton, Edward F.
Fausel, Robert W.
Griffith, Willard D.
Reynolds, John N.
Russell, Clyde R.
Schaetzel, George E.
Trembly, Wonderful A.

BOMBARDMENT SECTION (4 Officers, 24 Cadets).

Officers

Captain Reginald R. Gillespie, Air Corps
Captain Wilfred J. Paul, Air Corps
1st Lt. Richard T. Coiner, Jr. AC (Cavalry)
2nd Lt. Gene H. Tibbetts, A.C. (Infantry)

Flying Cadets

Beardsley, Melville W.
Bicking, Charles W.
Bronson, Howard F., Jr.
Burke, Kevin
Chapman, Charles T., Jr.
Curry, William L.
Eyre, Lloyd
Faulkner, Ted S.
Grove, Robert L.
Hardy, Robert F.
Jones, James M.
Ketcham, Edward W.
Miller, William W.
Nevitt, William R.
Osborn, Roy W.
Osher, Norman C.
Peterson, Homer F.
Powers, Robert B.
Ridings, Donald E.
Sandegren, Thomas E.
Sluder, Chester L.
Strieber, Edward M.
Thomas, Jack
Warner, Jo K.

OBSERVATION SECTION (5 Officers, 9 Cadets).

Officers

Captain Karl S. Axtater, Air Corps
Captain Uzal G. Ent, Air Corps
Captain John G. Salsman, Air Corps
1st Lieut. Ralph E. Holmes, Air Corps
2nd Lt. William J. Holzapfel, Jr., A.C. (C.E.)

Flying Cadets

Catlin, Ralph W.
Hampton, Thomas K.
Flolo, Russell L.
Martin, Ray H.
Moore, Andrew D.
Pechuls, John A.
Rethorst, William
Schultz, Herbert D. Jr.
Zehrung, Paul W.

PURSUIT SECTION (12 Flying Cadets)

Baumler, Albert J.
Bledsoe, James L.
Boyer, Jimmy V.
Buller, Howard L.
Dane, Paul H.
Ferguson, James
Haws, Jesse W.
Helmick, Paul F.
McCloskey, Richard D.
Michael, Bruce E.
Saehlenou, Hadley V.
Whitfield, Hervey H.

DEATH OF A NOTED EYE SPECIALIST

A sudden heart attack marked the passing on Thursday morning, March 12th, of the world's greatest figure in Opthalmology, Dr. William Holland Wilmer, who of late maintained a practice in Washington, D.C. During his brilliant career, his patients were legion and ranged from the poor and lowly to persons prominent the world over. The King of Siam came half way around the world to receive treatment at Dr. Wilmer's skilled hands. He ministered to four Presidents of the United States, various members of the Cabinet, Ambassadors, Justices of the Supreme Court, prominent bankers, novelists, editors, inventors, opera stars, school teachers, baseball players, etc.

Dr. Wilmer left behind him the Wilmer Opthalmological Institute at Johns Hopkins University, Baltimore, Md., a lasting monument to the man who devoted all his life to his fellow man. The Institute, a $4,000,000 tribute to the beloved physician from former patients, is believed to be the world's most complete institution of its kind - a haven that offers rays of new hope to people all over the world suffering the misfortune of a failing eyesight.

Although he was in his 73rd year, Dr. Wilmer was, until the day of his death, carried by the War Department as a member of the Medical Reserve Corps, his rank being that of Brigadier-General, which appointment was tendered him on November 4, 1921. He saw active service in the Medical Corps of the Army during the World War, both in the United States and overseas, and the work he performed was of such an outstanding character as to earn the award of the Distinguished Service Medal, which decoration was conferred upon him May 3, 1919. On August 4, 1924, the French Government made him a Commander in the Legion of Honor.

Dr. Wilmer's first appointment in the Army was as a first lieutenant, Medical Reserve Corps, in 1911. During the World War he was commissioned a Major in that Corps and placed on active duty on October 1, 1917, in the Office of the Chief Surgeon, Aviation Section, Signal Corps, Washington, D.C. He was subsequently promoted to Lieutenant-Colonel and to Colonel.

Assigned as a member of the Medical Research Board, he made frequent trips to the Medical Research Laboratory at Mineola, L.I., New York, for the purpose of studying the physical and physiological conditions which affect airplane pilots. On August 7, 1918, he departed for overseas service and was assigned to station at the Third Aviation Instruction Center at Issoudun, France. His service overseas carried him to various aviation camps and training centers in connection with medical aviation problems.

During the month of January, 1919, he was one of three American medical officers who attended the Interallied Medical Conference in Rome, Italy.

In recommending Colonel Wilmer for the award of the Distinguished Service Medal, Major-General Mason M. Patrick, Chief of the Air Service, A.E.F., and later Chief of the Air Corps, U.S. Army, worded the citation therefor as follows:

"A member of the National Council of Defence, chairman of one of its important subcommittees, a member of the Medical Research Board and in charge of the Medical Research Laboratory at Mineola, L.I., surgeon in charge of medical research laboratories, Air Service, A.E.F., since September, 1918. In all of these capacities Colonel Wilmer has rendered most distinguished service. While on duty with the American Expeditionary Force, Colonel Wilmer's thorough knowledge of the psychology of flying officers and the expert tests applied efficiently and intelligently under his direction have done much to decrease the number of accidents at the flying schools in France and have established standards and furnished indications which will be of inestimable value in all future work to determine the qualifications of pilots and observers. The data which have been collected under Colonel Wilmer's direction are an evidence of his ability, his painstaking care and of his thorough qualifications for the important work entrusted to him. The laboratory established by him at Issoudun and the new methods, instruments, and appliances devised under his direction for testing candidates for pilots and observers have attracted the attention and been the subject of enthusiastic commendation by officers of the Allied Services who have had the opportunity to examine them, and no doubt will be of great importance in promoting the safety and the more rapid development of aerial navigation."

Colonel Wilmer returned to the United States in the latter part of March, 1919, and on April 4th of that year was assigned to duty on the Administrative Staff, Office of the Director of Air Service, Washington, D.C. He was honorably discharged from the military service, May 15, 1919, and shortly thereafter commissioned in the Medical Reserve Corps.

Dr. Wilmer was born in Powhatan County, Va., August 26, 1863. He received his preparatory education at Episcopal High School in Alexandria, Va., and obtained his M.D. degree at the University of Virginia in 1885. He studied subsequently at New York Polyclinic Hospital and in several European hospitals. Honorary degrees were conferred upon him by Georgetown, Princeton and New York Universities. He began his active medical career in New York City in 1887. Later he

(Continued on page 14)

ZERO WEATHER OPERATIONS BY WASHINGTON NATIONAL GUARD AIRMEN

By Lieut. Ellsworth C. French

Some Air Corps officers go on so called Arctic Patrol Flights because they are ordered to do so, while others go voluntarily apparently because they like to. Perhaps it is because the 41st Division Aviation, Washington National Guard, Felts Field, Spokane, is the most northern Army Air Corps station in the United States that causes the pilots of this organization to laugh at zero weather. At any rate, the "Winter Games" for the 41st Division Aviation are thought to be over for 1936. In their wake is a vast amount of valuable information about flying conditions and airplane and motor repair, with the temperatures hovering 40 degrees below zero, gained in the Rockies and Promontory Mountains in Montana and Utah, respectively.

As a sequel to all such things there naturally comes some fun, which is scheduled to result in the presentation of the Air Corps' famous "Dumb Bell" and the joking suggestion that the 41st Division insignia, an Ace of Spades with a dagger through it, should be changed to a Four-Leaf Clover. But come what will, Major Robin A. Day, Instructor and Commanding Officer, is pleased with the results, regarding same as a credit to any Regular Army Air Corps organization.

Things started to happen in 41st Division Headquarters when a telegram was received from Lieut. E.A. Malstrom, at Salt Lake City, stating that he cracked up a Douglas O-38 when taking off from there for his home station, enroute from a cross-country trip to Denver. A heavy blanket of snow covered the Salt Lake field, making the take-off slow. What appeared to be a drift of snow turned out to be a snow-covered pile of dirt left by WPA airport workers, and which the landing gear "just quite" did not clear. Results: no injuries to pilot or passenger, Private Kavanaugh; to airplane, a crumpled lower left wing, wrecked left landing gear, damaged propeller and motor. The personnel returned home by motor bus.

Necessary repairs were shipped immediately from the depot at San Diego, but reports from the Air Corps Reserve detachment at Salt Lake City indicated that ten days or more would be required to repair the airplane.

To speed the repair work, Lieut. Malstrom, about a week after the accident to his plane, took off from Felts Field to fly Sergeant Warren Fackenthall, mechanic, to Salt Lake City. Between Boise, Idaho, and Salt Lake City, a heavy snow storm was encountered and darkness set in. The SCR-134 radio failed to function, despite the skilled operation by Radio Specialist Fackenthall. Only a faint voice could be heard now and then. For miles north of Promontory, Utah, the natives are still telling the story of how Lieut. Malstrom was flying between the telephone poles in the snow storm.

"We milled around in the mountains as long as we could, but there wasn't another place to land," Lieut. Malstrom related. "What proved to be Promontory offered the only available landing field, and that was a farm."

But Old Man Snow had laid his second trap for Lieut. Malstrom, who was just about to glory in his emergency landing when a large snow drift was encountered near the end of the roll. Results: Douglas O-38 nosed over, spar broken in two places, upper wing damaged, also fin and rudder, no injuries to pilot or passenger. 5:35 p.m.

Promontory is historically prominent, it being the place where President Cleveland drove the golden spike at the dedication of the Southern Pacific Railroad many years ago. A monument marking this event is still standing, but that is about all there is left of Promontory

"Some people may remember Promontory because of what President Cleveland did there," Lieut. Malstrom declared, "but I'll never forget it because of that 43-degrees below zero temperature that prevailed as we crawled out from under the airplane." It developed that the Lieutenant called "his shot" when he picked Promontory as the place to nose over. Once upon a time Promontory was a railroad roundhouse town, but not any more. The remains of the roundhouse stood in about four feet of snow, and trains from Salt Lake City only use the rails to Promontory every fourth day.

"It was a lucky break," continued Lieut. Malstrom. "Thirty minutes after we nosed over, along came a train for Salt Lake. There wouldn't have been another for four days. They called this one the 'Rabbit Special,' because it carried a lot of Salt Lake hunters who were returning from a week-end rabbit drive."

News of the second crack-up near Salt Lake resulted in considerable thought, but no alarm at 41st Division Headquarters. Somewhere in regulations is a provision that in case of accident the nearest Air Corps station will take command of the situation. But the Air Corps Reserve detachment at Salt Lake were apparently still "swamped" in their attempt to repair the first Douglas O-38 of about a week before. Therefore, a caravan of a Chevrolet truck, a trailer and a private touring car was organized at Division Headquarters for the trek of several hundred miles over snow and ice-covered roads, in sub-zero temperatures, for Promontory. Sergeant John Simpson, Regular Army Sergeant-Instructor, headed the party, composed of Mechanic Sergeants Andy Anderson, Bill Finch and Elmer Erickson.

Major Day, a trailer enthusiast, donated his Silver Dome trailer to the cause. Food was stored in the truck, also a drum of gasoline, tools, and a pair of skiis which, it was hoped, might be helpful in getting the ship out from Promontory.

Days of sub-zero driving in the mountains found the overland party snowbound when within about four miles of Promontory. The snow was about five feet deep and the temperature 43 below, with a stiff ground wind. Because of worse conditions in their locality, the Utah State highway department could not respond to the appeal to assist the snowbound auto caravan. Finally, a team and sleigh came to the rescue, and the party was transported into Promontory. Immediately, the Southern Pacific railroad was notified to send a car in which to ship the airplane to San Diego and, fortunately, the message arrived in time to catch the train on its "fourth day trip."

Flying suits, fur-lined boots and helmets constituted the clothing for the work party, which had the inquisitive volunteer assistance of the natives. Snow had continued to fall, covering part of the nosed-over airplane. Lines were fastened to each wing and made safe as the work of righting the ship started. As a team of horses pulled the ship up on its nose, one of the lines broke by the force of the wind. Here good fortune played an important part. The wind spun the ship around on its nose, leaving it in the proper flying position.

The greatest difficulty came in loading the ship into the automobile-end door freight car. The wings were removed, but the motor and landing gear remained intact. Crow bars, however, sprung the doors sufficiently to permit wiggling the fuselage back and forth so as to get the ship in the car.

These hardships, however, were not without fun and interest. Promontory is surrounded by a sheep and cattle country. News of the crashed airplane reached the hills, and on Sunday the cowboys with their 10-gallon hats and chaparejos came to town to see the fun. The inspection of the airplane satisfying their curiosity, they all gathered at the country store, where they munched peanuts, tossed the shells on the floor and warmed their shins.

Sergeant Erickson became the "aerial cowboy" as, wearing his flying suit and helmet, he rode back and forth on a pony for tools. Deep snow made it impossible for the pony to make the four miles in less than four hours.

But things were going on over Red Rock, Montana, where Lieut. Dale Swartz and Sergeant Miller Cowling, returning from a cross-country flight to Chicago, were forced to land on a farm. A temperature of more than 40 degrees below zero welcomed them. No apparent damage, however, resulted to the airplane, which was started the next day after considerable difficulty. Enroute to Butte, Montana, from Red Rock, the oil gauge dropped to zero, resulting in a forced landing on the emergency field some distance from Whitehall, Montana, where the altitude is 5,000 feet, and with a temperature still lower than 40 degrees below. Inspection of the motor showed that it was burned up. Another motor was shipped from Felts Field to Whitehall.

The motor caravan drove from Salt Lake to Whitehall, crossing three ranges of mountains.

"It was more than 50 degrees below in Whitehall at night, but it warmed up 15 or 20 degrees in the daytime as we changed the motors," reported Sergeant Simpson.

Trees were cut to build a tripod for the removal of the burned motor, and a large truck was hired to transport the new motor to the field. It was here that the mechanics developed a unique idea for changing motors. The tail of the airplane was raised to a flying position and the hose of the ship shoved into the covered truck body which contained the motor. A large canvas was spread over the truck and airplane, thus forming shelter under which the mechanics worked, again wearing flying suits against the sub-zero temperatures. "The tools would get so cold, and our hands were so cold that we would drop the tools just like they were hot," said Sergeant Anderson. "About four days were required to change the motor."

Heaters were operated inside of the truck body to provide heat for the workmen. The battery of the airplane was almost completely discharged, but after a prolonged warming the motor started after being pulled through twice.

As Lieut. Swartz took off for Felts Field, the motor caravan started its trek for Felts Field. Its arrival there marked the completion of a journey of 2700 miles on snow and ice over the largest mountains in the West and under sub-zero weather conditions.

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During the course of the Winter Test Maneuvers, Major Barney M. Giles, of Langley Field, shortly after midnight on the morning of February 10th, departed from Concord, N.H., for Cape Cod, Mass., to locate seven CCC youths, marooned on drifting ice floes off their camp at Brewster, Mass. Major Giles sighted the youths before daybreak and sent messages to Concord to dispatch two airplanes with food and blankets for them. The airplanes promptly arrived over the scene, dropped the food and blankets, and returned to Concord before the outside world was aware of the location of the youths.

The Langley Field squadron in the maneuvers completed all required tests on February 14th, a returned to the home station the following day.

DEVELOPMENT OF MILITARY AVIATION IN PROGRAM OF NATIONAL DEFENSE

In an address over the radio on the night of March 5th, the Hon. William N. Rogers, M.C., of New Hampshire, a member of the House Military Affairs Committee, said:

"On July 2, 1926, Congress passed the act creating the Army Air Corps. Although nearly 10 years have elapsed, we still have a deficiency therein of 561 Regular and Reserve officers, and unless the American people are fully informed as to the facts and bring the matter to the attention of their representatives in Congress the Air Corps will never be filled.

"Let me illustrate: In 1931 only 33 additional officers were commissioned in the Army Air Corps; in 1932 only 18 additional officers; in 1933 only 28; in 1934 only 17 additional officers; in 1935, 46 additional officers; and in the first half of the fiscal year 1936 we had a loss of 2 officers. Thus during the last preceding 5½ years there have been added only 140 commissioned officers to the officer personnel of the Air Corps. At this rate it will require 15 years to add 300 officers.

"During such a period many officers will have been killed, others will die from natural causes, still more will be disabled and retired, and some will be retired on account of reaching the age limit of 64. It has been well said that adequate preparedness, first of all for air defense, second for sea defense, third for land defense, will promote the peace of our Nation and enable the American people to carry on the arts of Christian civilization with actual security.

"Last month I went to New Hampshire in an Army plane to witness the Air Corps maneuvers held by the Army Air Corps in New England and New York. When I speak of the Army Air Corps, of what do I speak? On February 12 it was reported in the press that the chairman of the Committee on Military Affairs, of which I have the honor to be a member, was seeking a corps of 4,000 planes by 1938. The press then reported that England had plans for 5,600 planes by March 1937, and that Germany now has from 7,000 to 10,000 planes.

"As to America's inadequate air defense, let me quote from the testimony of Maj. Gen. Oscar Westover, Chief of the Army Air Corps, gigen before the Appropriations Committee in December 1935, in which he said, 'It is estimated that not more than 736 airplanes now on order will be delivered during the fiscal years 1936 and 1937. During this time there will be estimated losses of 981 airplanes. The net result of these factors, therefore, will leave the Air Corps on June 30, 1937, with an estimated number of 779 project airplanes, with about 529 planes classed as obsolete on account of having passed the 5-year age limit. Such of the 529 as are suitable for retention will have to be continued in use in order to permit necessary flying by Air Corps personnel. The number and type of airplanes now available in our foreign departments makes the air defense of these possessions almost impotent, and the same lack of airplanes is greatly handicapping the ground force in the training for their part of the defense.'

"Hon. Harry H. Woodring, Assistant Secretary of War, also testified before the Committee on Appropriations on January 16, 1936, that 'the Army Air Corps will have approximately 777 airplanes in its possession on July 1, 1936.'

"We get only 565 planes under the War Department appropriation bill which passed the House last month. Allowing for washouts and considering the recommendations of the Howell Commission and the Baker Board that we should have 2,320 planes, how does that leave us? Mr. Woodring was asked how many planes he was able to purchase under the 1936 appropriations, and he said: 'A continuation of the appropriation of the above size will never permit the Army Air Corps to reach its desired strength, as it will only take care of approximately yearly losses. I am not one who advocates more airplanes than we need for national defense, but I do say that the best service we can render our constituents, our States, and the Nation is to provide for rational Air Corps development, so that we may carry on without the loss of a single life on account of inadequate preparation.

"Gen. Oscar Westover, Chief of the Air Corps, testified that in the past 5 years 1,371 planes were delivered to the Army, while during that same time we lost 1,621 planes by absolescence or wash-outs, leaving us with a loss of 250 planes during the last 5 years.

"We are now nearly 10 years behind in the development of the Army Air Corps. The following is a list of airplanes on order or obtained during the last 6 years:

1930 - - - - - - - - - -	555 planes
1931 - - - - - - - - - -	364 "
1932 - - - - - - - - - -	285 "
1933 - - - - - - - - - -	118 "
1934 - - - - - - - - - -	222 "
1935 - - - - - - - - - -	401 "

"It has been reliably estimated that we must have 800 planes per year if we are to increase the present strength of our air force. The general headquarters air force for adequate self-defense must have a minimum of 980 serviceable airplanes able to take the air at any time. In spite of this fact the maximum number yet supplied to the general headquarters air force is 383 planes. When the recent maneuvers took place in Florida General

Andrews was able to take the air with only 162 serviceable planes.

"As showing the utter inadequacy of this situation from the standpoint of national defense, let me emphasize the fact that all great nations now have huge airplane carriers, which are, in fact, floating landing fields, to enable them to carry aerial warfare to enemy shores. They also have floating seaplanes and mother ships.

"We are advised that only 30 tons of explosives were dropped on London in the World War, resulting in the loss of 1,800 lives, while today planes are being constructed, any one of which will be able to drop 10 tons of explosives. The situation is well emphasized by the fact that German seaplanes of existing types now alight on the South Atlantic Ocean, between Africa and South America, to moor astern of a station ship (S.S. Westphalian). This vessel is an ordinary merchant type, supplied with aviation fuel and other serving facilities. Fuel and oil are transferred to the seaplane on the water. Meager reports mention experiments with a canvas ramp astern on which the seaplane may be hauled; also trials of canvas shelters for protection during refueling operations. The military significance of this commercial 'mother ship' for seaplanes appears to have been ignored. As seaplanes become larger their ability to alight safely on the ocean increases. Acknowledging only the existing sizes of seaplanes, it is rather startling to contemplate that small, inexpensive merchant ships are capable of serving as ocean supply bases for transoceanic bombing planes.

"The Federal Aviation Commission has been advised that seaplanes are now in course of design that can transport 10 tons for a nonstop flight of 2,000 miles. A single seaplane of that type - which is a prospect for the immediate future - then could drop 10 tons of bombs on any American coastal city simply by prearranging a rendezvous with a small servicing vessel at sea a thousand miles from the coast line.

"These facts strongly emphasize that our homes in New England and throughout the Nation are no longer protected from air attacks, because of the wide extent of the Atlantic and Pacific Oceans, and we must govern ourselves accordingly if we are to maintain adequate national defense.

"In conclusion let me say that I am a firm believer in national economy, but the neglect shown in the development of Army aviation is nothing but false economy. While foreign nations are making available thousands of planes for attack and aggression, I ask you without further delay to advocate a policy of national defense by urging your representatives in Congress to enact legislation which will enable the United States of America to bring its Army Air Corps to 2,320 planes, as advocated by the unanimous report of the Baker board and the Howell commission.

"The enactment of this legislation is essential to achieve a full realization of the words of counsel uttered by our first President, George Washington, when he said, 'We should maintain a respectable defensive posture.'

"For the United States of America the development of air power because of its limited range is purely a weapon of defense, but such development as proposed herein is necessary for adequate defense.

"In the matter of national defense we frequently fail to recognize the relative protection afforded by an adequate Navy. We must remember that the hostile fleet is the main objective of the home fleet, therefore depends largely on the action of the enemy. Since our fleet must be free to meet the enemy fleet, we cannot predict what portion of our coast will be protected by our Navy or how long such protection may last. As a result of this important factor we must realize the necessity of an adequate Air Force in the maintenance of an effective national defense."

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EXCITING RIDES IN TRUCKS AND PLANES

By the Luke Field Correspondent

Tobogganing in reconnaissance trucks is really a most novel experience. Did you ever ride over one of Schofield Barracks red mud trails (they call them roads) just after a heavy rain? During our last artillery adjustment problem, several of our pilots (4th Observation Squadron) were at the battery C.P., observing the fire when a miniature cloudburst fell on the firing range and forced cessation of fire. We climbed into our truck and started back to the flying field to get our planes. The red mud trail was a quagmire; one minute the truck was scraping against the hill and the next moment it would skid over toward the gulch, enabling the passengers on that side to have a very marvelous view of the 200-foot precipitous drop to the bottom of the gulch. Sliding sideways down a one-way road in a truck is very hard on the nervous system, and everyone was glad to climb into the cockpit. The hazards of flying seemed trivial after that trip.

The short "hop" home, however, was a memorable one. The terrific air currents coming over the mountains tossed the O-19's around with little regard for personal comfort. Captain Upthegrove will testify that trying to observe fire and operate a radio with rain pouring down your neck and yourself half way out of the cockpit most of the time is a great Hawaiian sport. An indication of the force of the air currents is the fact that of the five planes on the flight, three of them sprung leaks in their gas tanks.

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"INSIDE AIRWAY" TO ALASKA

Members of the 41st Division Aviation, Felts Field, Spokane, Wash., have seen another one of their wishes come true.

For many years they were active in the promotion of the Northern Transcontinental Airway, now a reality. During recent months they have been equally interested in the development of the so-called "inside airway" between Spokane and Alaska. Even hoping against hope that one of them might some day be authorized to fly the "inside route" to Alaska, they have long waited for the first flight from Spokane to the interior of the northland.

It came on February 28th, when Joe Crosson, Alaska's No. 1 birdman, and his co-pilot, Walter Hall, took off from Loon Lake, 30 miles north of Spokane, in their ski-equipped Lockheed Electra over the "inside airway" to Tanana, Alaska, home station of the Pacific Alaska Airways, a subsidiary of the Pan-American Airways.

As none of the commercial hangars on Felts Field was large enough, including their present storage of commercial ships, the Division Aviation extended Crosson the privilege of housing his airplane in the Division hangar while he switched from wheels to skiis. It was an interesting observation as Crosson installed a pair of newly designed duralumin skiis, costing $25,000. and designed by Lockheed factory engineers, who assisted with the installation under the observation of a representative of the Department of Commerce.

The Electra was powered with "Wasp Seniors." Empty, the ship lifted its skiis from the snow in 11 seconds after the take-off. Loaded, a "coast" of 20 seconds was required before the ship was in the air. It was the same airplane which Crosson utilized to return to the United States the remains of the late Will Rogers and Wiley Post. The plane had been sent to the factory for a major overhaul.

"It is much shorter from Spokane to the interior of Alaska over the 'inside route' than the coastal route, and the winter flying conditions are much better," Crosson stated. His take-off from 15 inches of ice at Loon Lake rather than from Felts Field was rendered necessary by a chinook wind which freed the airport of all snow overnight.

Crosson's path of flight over the "inside route" went north from Spokane to Prince George, thence to White Horse, Fairbanks and Tanana, a distance of 2200 miles. He carried 265 gallons of gasoline in his tanks and 150 gallons in cans.

Known often as the "mercy flyer" because of his daring and rescue flights in the north country, Crosson did not leave here without a mission of great importance awaiting him near his base. Before he left he was handed an Associated Press dispatch from Fairbanks, Alaska, where friends of Mary Joyce asked that Crosson search for Miss Joyce on his homeward flight. Miss Joyce and her Indian guide, Jimmy Allen, have been missing since February 9th, when they started with a dog team on a 300-mile trek across a sparsely settled frozen region.

Crosson's plane took the air easily off the ice. He circled low once around the lake and disappeared quickly into a tree-top fog which hovered over it. Special weather reports indicated he would have no trouble in the "inside airway."

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NEW BOOK ON AVIATION

"This Flying Game" is the title of a new book recently published by Funk and Wagnalls, New York. The authors are Brigadier-General Henry H. Arnold and Major Ira C. Eaker, Air Corps. In this authoritative and profusely illustrated volume are the answers to the almost countless questions of eager air-minded boys and their elders, viz: How can I get into aviation? What training do I need? etc. These questions and many others are competently handled by the authors.

The book is designed not merely for the would-be flyer, but for all readers interested in aviation. The authors tell of the technique of flight, of the making of airmen and airplanes, of aviation's present problems and of its hopes, and in the final chapters they venture into prophecies concerning the future of aviation.

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FERRYING FLIGHTS BY SELFRIDGE FIELD PILOTS

Departing from Selfridge Field, Mt. Clemens, Mich., on February 22nd for Seattle, Wash., for the purpose of procuring and ferrying to their home station P-26C airplanes manufactured by the Boeing Company, were Majors Warren A. Maxwell, Alfred A. Kessler, Jr., Captains Earle E. Partridge, Dixon M. Allison, Daniel C. Doubleday and Hanlon H. Van Auken.

The five pilots, led by Lieut.-Colonel Ralph Royce, Commanding Officer of the 1st Pursuit Group, who departed on February 6th for the Boeing plant at Seattle, Washington, to procure P-26C airplanes, returned to Selfridge Field in these new planes on February 28th. The four other pilots were Majors Edwin J. House, Fred C. Nelson, George P. Tourtellot and Captain Emmett O'Donnell, Jr., Air Corps.

came to Washington and practiced in the nation's capital until 1925, at the same time being a professor of opthalmology at Georgetown University. He then became director of the Wilmer Opthalmological Institute at Johns Hopkins Hospital in Baltimore, and taught at Johns Hopkins University while supervising work of the hospital institute. In 1934 he returned to Washington to carry on private practice.

Dr. Wilmer was a member of numerous Medical Societies, both civil and military, as well as patriotic societies and organizations. On innumerable occasions he rendered invaluable assistance to the Army medical staff at the Walter Reed General Hospital as a consultant in opthalmological cases.

The Air Corps shares in the universal regret which the demise of this great specialist has occasioned, being fully conscious of the outstanding pioneersing service he has rendered to safeguard flying and reduce casualties. His contribution to aviation proved of incalculable value in the introduction of certain physical standards during the World War and in the years which followed which are required to be met by those seeking a career in flying before airplanes are entrusted to their care.

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NATIONAL DEFENSE DEMONSTRATION AT SPOKANE

By Lieut. Ellsworth C. French

National Defense is to be presented in a manner that will win for it thousands of new friends throughout the Northwest at the Military Defense Demonstration to be staged at Felts Field, Spokane, Washington, the station of the 41st Division Aviation, on May 29, 30 and 31, 1936.

Approval of the program has been given by Spokane's most prominent business men, who have pledged their support to the demonstration and are working actively with the sponsors of the demonstration, namely, the 148th Field Artillery, Coeur d'Alene, Idaho; the 161st Infantry regiment and the 41st Division Aviation.

Both Governor Clarence D. Martin, Commander-in-chief of the Washington National Guard, and his Adjutant General, Brigadier General Maurice Thompson, are working with the committee in charge The cooperation of the Reserve Army, Navy and Marine Corps groups in Spokane has been enlisted.

There is every prospect at this time that the demonstration will be the occasion for the largest assembly of military troops in the Northwest this year.

Every possible civilian contact is being made a part of the demonstration. Spokane Post No. 9, American Legion, is being asked to sponsor contests among local high schools for the purpose of selecting "Miss Memorial Day," who will be crowned by the oldest member of the Grand Army of the Republic as a feature on the Memorial Day program.

Committees of the Spokane Chamber of Commerce are being asked to sponsor a banquet, or luncheon, at which visiting high ranking Army officers will be the honored guests. The aviation committee is being asked to sponsor an aviation conference at which the completion of all public works airports will be urged.

The Junior Chamber of Commerce is to be asked to cooperate in entertaining the visiting military officers and, possibly, to stage a military ball.

Efforts of the sponsoring organizations are being directed toward the actual demonstration. Major Edwin Patrick, Regular Army Instructor attached to the 161st Infantry regiment, is in command of the ground activities, while Major Robin A. Day is commanding the aviation acticities.

Following their Federal inspection, all companies of the Infantry regiment will start specializing in special events for the demonstration.

The motor caravan that will move into Spokane for the demonstration will be a feature in itself. Infantry companies from Yakima, Pullman, Wenatchee, Prosser and Pullman will all come by truck.

The 148th Field Artillery from Coeur d'Alene, with its new motorized light field artillery equipment, will move in by truck. Although not officially invited, Lieut.-Colonel Howard Wright, commander of the 146th Field Artillery, Seattle, has stated that he desires to bring his organization over the Cascade Mountains to participate.

Colonel Louis Farrell, commander of the Regular 4th Infantry, Fort George Wright, proposes to camp his men at the airport during the demonstration and to participate in all reviews and parades.

Efforts of the committee are now being directed on the GHQ Air Force in an attempt to secure Regular Army Air Corps for the demonstration. Naval air officers in Seattle have already indicated their desire to attend the demonstration.

"More such demonstrations like the one planned by Spokane should be held throughout the United States," said Brigadier-General Carlos Pennington, commander of the 81st Brigade. "Much good will come to the services through such favorable contacts with the military. Too many people have the wrong impression of the service, but by actually mingling with the troops in the field, as they will at Felts Field, and seeing them operate, they will gain the correct impression and will have a feeling of pride about their military."

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Thanks are extended to Corporal Floyd A. Rice, 21st Airship Group Headquarters, Scott Field, Ill., who drew the attractive cover for this issue of the News Letter.

BIOGRAPHIES

COLONEL RUSH B. LINCOLN, AIR CORPS

After a lapse of almost 14 years, Colonel Rush B. Lincoln, Air Corps, is back in a position in the Office of the Chief of the Air Corps which is quite familiar to him - that of Chief of the Personnel Division, which he held from November 13, 1918, to July 4, 1922.

Colonel Lincoln became affiliated with aviation, September 22, 1917, when he accepted a commission as Major in the Aviation Section, Signal Corps. At that time on duty with the 22nd Infantry at Fort Jay, N.Y., as Adjutant and Assistant Mustering Officer, he was ordered to Wilbur Wright Field, Fairfield, O., where he served as Executive Officer until December 12, 1917. He then reported for duty at Camp MacArthur, Waco, Texas, where he commanded the 1st Provisional Regiment, Aviation Section, Signal Corps, and was engaged in organizing and equipping squadrons for overseas duty.

On April 28, 1918, Colonel Lincoln reported for duty in the Air Division, Office of the Chief Signal Officer, Washington, D.C., and was assigned as Personnel Executive, a position he occupied until his appointment as Chief of Personnel. During his tenure of duty in the last-named position, he was on four months' detached service as student at the Army Balloon School at Ross Field, Arcadia, Calif., from which he graduated September 18, 1921, receiving the rating of "Balloon Observer."

A student in the 1922-1923 course at the Command and General Staff School at Fort Leavenworth, Kansas, he graduated in June, 1923, following which he was assigned to Scott Field, Belleville, Ill., as student at the Balloon and Airship School. He performed additional duty as Assistant Commandant of this School from May, 1924, to July, 1924, when he was assigned as student at the Army War College, Washington, D.C. He was rated "Airship Pilot" as of July 2, 1924.

Graduating from the Army War College, June 29, 1925, Colonel Lincoln was detailed as a member of the War Department General Staff, Washington, D.C , and assigned to the G-3 Division (Training Branch). On September 8, 1926, he was assigned as Chief of Air Section, G-4, Supply Division, and also to the Construction Branch of that Section of the General Staff.

Completing his four-year tour of duty as a General Staff officer, he reported on July 1, 1929, for duty as Air Officer of the 1st Corps Area, Boston, Mass., and he served continuously in this capacity until his assignment on February 17, 1936, to his present duty in the Office of the Chief of the Air Corps.

Colonel Lincoln was born on December 8, 1881, in Boonesboro, Iowa. He graduated from the Iowa State College of Agriculture and Mechanical Arts, with a B.S. degree, in 1904. Commissioned from the ranks as second lieutenant of Infantry, February 11, 1907, he served for several years previous thereto as private and as noncommissioned officer with the 2nd Infantry, and later with the 18th Infantry. He was promoted to 1st Lieutenant, 8th Infantry, June 7, 1911; to Captain, 22nd Infantry, July 1, 1916; to Major, Signal Corps, September 22, 1917, and to Lieut.-Colonel, Air Service, August 24, 1918. He reverted to his regular rank of Major on July 1, 1920, on which date he was transferred to the Air Service. On May 21, 1930, he was promoted to Lieut.-Colonel, and on August 1, 1935, to Colonel.

Colonel Lincoln served with his regiment at Jolo, P.I., June, 1907, to March, 1908. From May, 1908, to March, 1911, he served at Fort Thomas, Ky., and thereafter, until February 15, 1912, at Schofield Barracks, Hawaii. Proceeding then to the Philippines for the second time, he served with the 8th Infantry at various stations until February, 1914. Upon his return to the United States, he was on duty with the 3rd Infantry at Madison Barracks, N.Y., to October, 1914; as Professor of Military Science and Taftics at the Iowa State College of Agriculture and Mechanical Arts, Ames, Iowa, to July, 1916; with the 22nd Infantry on Mexican border patrol duty in Arizona, to March, 1917, and with this regiment at Fort Jay, New York, to September, 1917, when he transferred to the Aviation Section, Signal Corps.

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LIEUT.-COLONEL WM. C. McCHORD, AIR CORPS

A native of Lebanon, Ky., where he was born December 29, 1881, Lieut.-Colonel William C. McChord, Air Corps, at present on duty as Chief of the War Plans and Training Division, Office of the Chief of the Air Corps, has been affiliated with military aviation since the World War. Previous to that time he served with the Cavalry, in which branch of the service he was commissioned as second lieutenant on June 14, 1907, following his graduation from the United States Military Academy. He also graduated from the Central University of Kentucky, receiving the degree of B.L. in 1901.

Col. McChord was promoted to 1st Lieutenant, August 9, 1914, and to Captain, March 31, 1917. He graduated from the Mounted Service School, Fort Riley, Kans., in 1914; from the Air Service Tactical School, Langley Field, Va., in 1923; from the Command and General Staff School, Fort Leavenworth, Kansas, in 1924, and from the Army War College, Washington, D.C., in 1929.

Prior to his appointment as a Major, Signal Corps, November 16, 1917, Col. McChord served with the 1st Cavalry, which was stationed along the Mexican Border. From the latter part of November, 1917, to early in February, 1918, he served in the Air Division, Office of the Chief Signal Officer, Washington, D.C. He was then assigned for flying training at Rockwell Field, Coronado, Calif. Passing the required tests for the rating of Junior Military Aviator, he was given this rating as of May 31, 1918.

In June, 1918, Col. McChord reported for duty at Ellington Field, Houston, Texas, where he completed the course in Bombardment Aviation, serving also as Executive Officer of that station. On August 16, 1918, he assumed command of Park Field, Millington, Tenn., and served there for four months when he was transferred to Gerstner Field, Lake Charles, La., for duty as Commanding Officer. In March, 1919, he was transferred to duty in the Office of the Director of Air Service, Washington, D.C., where he served in various capacities, such as duty in the Finance Section, Supply Group; as a member of the Air Service Claims Board; as Assistant to the Chief of the Materials Disposal and Salvage Division, Supply Group, and Assistant to the Chief of the Property Division, Supply Group.

Assigned as Air Officer of the Central Department (later the 6th Corps Area) in July, 1920, Col. McChord served on this duty for two years, and following his graduation from the Tactical School and the Command and General Staff School, he was assigned as Commanding Officer of Chanute Field, Rantoul, Ill., and Commandant of the Air Corps Technical School at that station. Early in 1928 he was transferred to the Advanced Flying School, Kelly Field, Texas, where he took the Special Observers' Course, graduating in June, and receiving the rating of "Airplane Observer" as of June 25, 1928.

Following his graduation from the Army War College, Washington, D.C., Col. McChord served as Instructor at the Command and General Staff School, Fort Leavenworth, Kansas, for a period of four years. He was then tramsferred to the Panama Canal Department and, by virtue of his duty as Commanding Officer of the 19th Composite Wing, he was temporarily promoted to the rank of Colonel. In October, 1935, upon the completion of his foreign service tour in the Panama Canal Zone, he was assigned to duty in the Plans Division, Office of the Chief of the Air Corps, and later as Chief of the War Plans and Training Division.

Col. McChord's total flying time as pilot and observer exceeds 3,000 hours.

FIRST WING MANEUVERS AT MUROC DRY LAKE

The 1st Wing of the GHQ Air Force, with the exception of the 19th Airship Squadron at Sunnyvale, Calif., and the 19th Bombardment Group, March Field, Calif., concentrated at Muroc Dry Lake in the Mojave Desert for bombing and gunnery maneuvers from March 10th to 20th. Muroc Dry Lake has been selected as the location of the semi-annual field exercises of the 1st Wing. The last exercises were held in the San Joaquin Valley in November, 1935, when the 1st Wing dispersed to several civilian airdromes scattered throughout that region.

Participating in these maneuvers are 110 officers, 700 enlisted men, utilizing 55 combat airplanes; 60 officers and 400 enlisted men being present from the 34th, 73rd and 95th Arrack Squadrons and the 64th Service Squadron, of the 17th Attack Group, and the 1st Wing Headquarters Detachment, March Field, Calif., and the remaining 50 officers and 300 enlisted men from the 9th, 11th and 31st Bombardment Squadrons and the 70th Service Squadron of the 7th Bombardment Group, Hamilton Field, Calif., which is 25 miles north of San Francisco.

The announcement regarding these maneuvers from the Headquarters of the 1st Wing, GHQ Air Force, March Field, Calif., Brig.-General Henry B. Clagett, commanding, stated, substantially, as follows:

Thirty-eight motor vehicles will transport the 17th Attack Group to Muroc from March Field and furnish one-half of the motor transportation for the maneuver camp. These will consist of 23 trucks, 9 motocrycles, 3 radio service trucks and 8 reconnaissance cars. The First Wing Headquarters Detachment will be carried to Muroc by the 76th Service Squadron.

Advance detachment of the First Wing Headquarters Detachment left on the morning of March 5th to make preliminary arrangements. Other units of the First Wing sent detachments to Muroc prior to March 10th, it having been directed by General Clagett that all of the squadrons must be prepared to engage in aerial combat by the morning of the 10th.

Army dignitaries expected to visit the camp during the ten-day period are Major-General Frank M. Andrews, commander of the General Headquarters Air Force; Major-General Paul B. Malone, commanding the 9th Corps Area, headquarters in San Francisco; Brigadier-General Edward M. Shinkle, Assistant Chief of the Ordnance Department.

Concrete bombs will be tried out during these exercises for the first time in the history of the Air Corps. These weigh exactly the same as the others and have a reasonable degree of accuracy. Invented by Captain Philip Schwartz, First Wing Ordnance Officer, these bombs will be used to test ability of ground crews to maneuver them, also to observe what effect they have on airplane formations when they are dropped.

An official radio transmitting set will keep March Field informed concerning important developments at the Muroc camp. This set will be too heavily loaded with official news to permit the transmission of unofficial business.

Bombing will not be limited to the dropping of concrete missles. A considerable number of high explosive deomiltion bombs will be taken along by the 7th Bombardment Group of Hamilton Field.

As the only machine guns in the First Wing are limited to the .30 caliber, all firing will naturally be in that category.

Officers on the First Wing Staff at Muroc, in addition to General Clagett, will be Lieut.-Col. Hubert Harmon, Wing Executive; Major Ray A. Dunn, Supply Officer; Captains Eugene H. Beebe, Adjutant and Public Relations Officer; Lloyd H. Watnee, Communications and Intelligence Officer; Charles B. Overacker Assistant Operations Officer, and Philip Schwartz, Ordnance Officer.

Leading the thirty Pursuit planes of the 17th Attack Group to Muroc from March Field was Lieut.-Colonel John H. Pirie. His staff comprises Major Walter R. Peck, Executive; Capt. Edward H. Alexander, Communications and Armament Officer; Lieut. Jesse Auton, Adjutant; 1st Lieut. Hunter Harris, Assistant Operations Officer.

Lieut.-Colonel Clarence L. Tinker commands the 7th Bombardment Group at Hamilton Field. His Executive Officer is Major Kenneth Walker; Supply Officer, Captain E.T. Noyes; Adjutant, 1st Lt. E.W. Suarez; Armament Officer, 1st Lt. Marvin L. Harding.

The 19th Bombardment Group (30th and 32nd Bombardment and 76th Service Squadrons) remaining at March Field will busy itself with other duties. The Bombardment squadrons will continue with their work in developing methods of adapting celestial navigation methods to air usage, while the Service Squadron will furnish the post transportation for the 50 officers and 750 enlisted men left behind.

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BUZZER INSTRUCTION AT LANGLEY FIELD

Pilots of the 35th Pursuit Squadron, Langley Field, Va., have been taking "buzzer" instructions under the capable supervision of Captain H.W. Dorr and have made rapid progress in both sending and receiving. Captain Budd Peaslee is now at the "head" of the class by virtue of his position next to the instructor.

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On February 7th, Lieut. Cunningham, of Langley Field, was forced to land at Mitchel Field, N.Y., on account of one retracted wheel. He was highly praised by the press and radio news flashes for his ability to act in a crisis.

LARGE CONTRACT PLACED FOR ENGINES

The Assistant Secretary of War, Hon. Harry H. Woodring, recently announced the placing of orders with the Wright Aeronautical Corporation, of Paterson, N.J., for 512 new aircraft engines. The total contract amounted to approximately $3,850,000. The purchase of this quantity of engines at this time parallels the recently awarded contracts for new airplanes.

A total of 432 engines, costing approximately $3,544,000, known as the Wright Cyclone R-1820-G, a 9-cylinder, air-cooled, radial engine, rated at 1,000 horsepower for take-off, the most powerful single row radial production aircraft engine in the world, will be procured for installation in the new Bombers.

This engine is the result of the cooperative effort of the engineering staff of Wright Field, Dayton, Ohio, and the Wright Company engineers. In its manufacture are incorporated the new dynamic damper which practically eliminates torsional vibration in crank shafts, new supercharger devices, new types of cylinder heads with greatly increased cooling area, which has resulted in lowered fuel consumption which, according to engineers, is now comparable to that of Diesel engines.

Of these engines, 328 will be used for installation in 82 new all-metal twin-engined bombing planes being manufactured by the Douglas Aircraft Company, of Santa Monica, Calif., and as spares, while 104 engines will be used for 13 four-engined all-metal Bombing monoplanes being manufactured by the Boeing Airplane Company, of Seattle, Washington.

In addition to the powerful engines for the Bombers, the War Department has also contracted for eighty 9-cylinder Wright Whirlwind engines of 450 h.p., which will be used for installation in and spares for 40 Basic Training monoplanes now being manufactured by the North American Company of Los Angeles, Calif.

In accordance with the established practice of the War Department, the engines have been thoroughly tested by the Air Corps at the Materiel Division, Wright Field, Dayton, Ohio.

The large order for modern engines will be of the greatest value to the Air Corps in the replacement of many engines now nearly obsolete or worn out, and without question will add to the safety and effectiveness of the equipment in which they are installed.

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Captain J.B. Jordan, of the faculty of the Air Corps Advanced Flying School, Kelly Field, Texas, conducted a group of graduating student officers of that School on a tour of inspection of the San Antonio Depot Engineering Shops on February 26th.

The Caterpillar Club is still doing business at the same old stand, and at the time this is being written there are recorded on the roster of this mythical organization 771 names - 762 men and 9 women, those lives were saved by the parachute. The number of emergency parachute jumps thus far made has reached 808, inasmuch as 32 members of the Caterpillar Club made two emergency jumps each; one, Major Frank O'D. Hunter, Air Corps, three; and one, Colonel Charles A. Lindbergh, who made his fourth parachute jump on November 3, 1926, over nine years ago, still the High Mogul of the Mystic Order of Caterpillars.

There was a falling off in Caterpillar Club initiations in the calendar year 1935 as compared with the previous year. The number of emergency jumps in 1934 totalled 84 as against 69 for 1935.

The highest number of initiations into the Caterpillar Club occurred in 1930, when a total of 134 individuals yanked the rip cord of their parachute to gain another lease on life.

The jumps by calendar years are set forth below, as follows:

1919	2	1925	13	1931	99
1920	1	1926	17	1932	95
1921	0	1927	40	1933	92
1922	2	1928	46	1934	84
1923	0	1929	92	1935	69
1924	10	1930	134	1936	12*

*up to February 27, 1936.

It will thus be noted that not since 1928 was the number of emergency parachute jumps in one year as low or lower than the number in 1935.

The reader may form his own conclusions as to the cause for the gradual decline in the number of parachute jumps since 1930. This much, however, may be said, and that is that this decline is not due to any reduction in the number of aircraft hours flown by military and civilian pilots.

Those who have joined the Caterpillar Club from January 1, 1935, to February 27, 1936, inclusive, are listed below, as follows:

No.	Date		Name	Rank	Place of Jump
	1935				
695	January	10	J. W. Johannpeter	Civilian	Pittsburgh Landing, Tenn.
696	January	11	Charles W. Wellman	Corporal, Air Corps	Brooksville, Indiana
697	January	19	F. R. Cook	Flying Cadet, Air Corps	Cortoro, Arizona
698	March	3	John H. Price	Sergeant, Air Corps	Near Centerville, Texas.
699	March	5	Clarence D. Fields	Staff Sergeant, Air Corps	Pescado River, Panama
700	March	5	Maurice E. Graham	Civilian	Grand Prairie, Texas
701	March	16	A. R. Radford	Lt.-Commander, U.S.Navy	Near Woodville, Texas.
702	April	4	John F. Guilmartin	Flying Cadet, Air Corps	Colton, Calif.
703	April	5	Daniel S. Campbell	2nd Lieut. Air Corps	Pearl City, Hawaii
704	April	8	A.B. Thompson	Lieut. (JG) U.S. Navy	Ramona, Calif.
705	April	8	J. Hulme	Lieut. (JG) U.S. Navy	Ramona, Calif.
706	April	8	H. G. Holden	Seaman, 1st Cl. U.S.Navy	Ramona, Calif.
707	April	14	Thomas H. Smith	Civilian	Weaver, West Va.
708	April	15	William C. McDonald	Sergeant, Air Corps	Ashland, Ky.
709	April	17	John W. Greene	Civilian	Boston, Mass.
710	April	17	John B. Ackerman	2nd Lieut., Air Corps	Kelly Field, Texas
711	May	6	Lee Gehlbach	Civilian Test Pilot	Ravenna, Ohio
712	May	11	Frank P. Hunter, Jr.	1st Lieut., Air Corps	Brujas Point, Panama
713	May	15	Miss Ya Ching Lee	Civilian student pilot	Oakland, Calif.
711	May	17	*Lee Gehlbach	Civilian Test Pilot	Dahlgren, Va.
714	May	24	Earnest Piercy	Civilian	Orrilia, Wash.
715	May	27	William A. Matheny	1st Lieut. Air Corps	Talassee, Alabama
692	May	30	*George S. Buchanan	Flying Cadet, Air Corps	Montpelier, Indiana
716	June	13	Hilmer Anderson	Civilian	Farkwater, Washington
717	June	20	Hanlon H. Van Auken	Captain, Air Corps	Chesterfield, Mich.
718	June	22	John L. Giles	Tech. Sergeant, Air Corps	Banning, Calif.
719	June	22	Francis H. McDuff	Flying Cadet, Air Corps	Banning, Calif.
115	June	22	*Richard I. Dugan	Captain, Air Corps	Banning, Calif.
720	June	27	Armin F. Herold	Major, Air Corps	Near Taylortown, La.
721	July	3	Frank B. Schaede	Lieut. (JG) U.S. Navy	Peridido Bay, Fla.

*Second emergency parachute jump.

No.	Date		Name	Rank	Place of Jump
	1935				
722	July	6	Douglas M. Cairns	2nd Lieut. Air Corps	Kaena Point, Oahu, T.H.
723	July	4	Clyde E. Shockley	Civilian	Muncie, Indiana
724	July	11	William J. Bell	1st Lieut. Air Corps	Guelph, Ontario, Canada
725	July	16	George E. Leach	Major General, U.S.A.	Near Seligman, Arizona.
726	July	20	Lyman W. Drew	Civilian	Tulsa, Oklahoma.
727	July	23	Forrest G. Allen	1st Lieut. Air Corps	Chanute Field, Ill.
728	July	27	Robert L. Conover	Civilian	New Brunswick, N.J.
729	August	4	John A. Dunkle	Civilian	Willoughby, Ohio.
730	August	10	Fulton G. Bulloch	Staff Sergeant, Air Corps	Pontiac, Ill.
731	August	18	Lucion N. Powell	Flying Cadet, Air Corps	Near Chelsea, Mich.
732	August	20	George W. White	Private, Air Corps	Watertown, New York
733	September	5	Donald T. Wright	Private, Air Corps	San Diego, Calif.
734	September	5	John L. Bailey	Sergeant, Air Corps	San Diego, Calif.
735	September	5	Samuel E. Brown	Major, Medical Corps	San Diego, Calif.
736	September	8	Frank B. Connor	Corporal, Air Corps	Enfield, Va.
737	September	8	Daniel C. Murdock	Private, Air Corps	Enfield, Va.
738	September	8	Charles A. Johns	Sergeant, Air Corps	Enfield, Va.
739	September	8	Willis S. Marvin	Flying Cadet, Air Corps	Enfield, Va.
740	September	12	Alva E. Knight	Civilian	Maplewood, Illinois.
741	September	21	William S. Decker	Private, Air Corps	Near Randolph Field, Texas.
742	September	22	Herbert A. Ottewill	Civilian	Westbury, L.I., New York.
743	October	11	William A. Hatcher	2nd Lieut. Air Reserve	Near March Field, Calif.
744	October	12	Raphael Baez	Captain, Air Corps	Near Chillicothe, Ill.
745	October	20	Julius A. Hudson	Civilian	Corning, Calif.
746	October	23	F. T. Corbin	Lieut., U.S. Navy	Pensacola, Fla.
747	October	25	Will A. Hielscher	Private, Air Corps	Premont, Texas
748	October	25	John H. Cheatwood	2nd Lieut. Air Reserve	Premont, Texas
749	November	10	Harold W. Fisher	Corporal, Air Corps	Near Flemington, N.J.
750	November	19	L. C. Simpler	Lieut. U.S. Navy	Clanton, Ala.
118	November	19	*Norme D. Frost	Captain, Air Corps	Ray Center, Mich.
197	November	20	*Lindsay M. Bawsel	Captain, Air Corps	Ocu, Panama.
751	November	20	William R. Tanner	Sergeant, Air Corps	Ocu, Panama.
752	November	20	R. D. Prescott	Major, Signal Corps	Ocu, Panama.
753	December	11	Edward L. Smith	Private, Air Corps	Eagles Mere, Pa.
754	December	11	Homer F. Berry	Sergeant, Air Corps	Eagles Mere, Pa.
755	December	11	Charles D. Heimbach	Private, Air Corps	Eagles Mere, Pa.
756	December	11	James R. Breslin	Private, Air Corps	Eagles Mere, Pa.
757	December	19	Samuel R. Brentnall	Captain, Air Corps	Balboa, Canal Zone
758	December	23	James D. Greer	Civilian	Bellbuckle, Tenn.
	1936				
759	January	11	George L. Brown	Private, Air Corps	March Field, Calif.
760	January	22	Frederick G. Huish	Flying Cadet, Air Corps	Randolph Field, Texas.
761	January	25	Thomas E. Lanigan	Private, Air Corps	Near Ford Island, T.H.
762	January	25	Charles E. Fisher	2nd Lieut. Air Reserve	Near Ford Island, T.H.
763	February	7	W. A. Trembly	Flying Cadet, Air Corps	Near New Braunfels, Texas.
764	February	12	Otto C. George	Captain, Air Corps	Near Stonewall, Ga.
765	February	12	Robin B. Epler	1st Lieut. Air Corps	Near Stonewall, Ga.
766	February	12	George Russell	Sergeant, Air Corps	Near Stonewall, Ga.
767	February	12	Harry McHayes	Sergeant, Air Corps	Near Stonewall, Ga.
768	February	14	Harry N. Burkhalter	2nd Lieut. Air Corps	Fulton, Arkansas.
769	February	14	W. K. Durham	Private, Q.M. Corps	Near Mansfield, La.
770	February	18	W. J. Kliffel	Sergeant, Air Corps	Near Sourlake, Texas.
771	February	27	George F. Rice	Lieut. (JG) U.S. Navy	Near Pensacola, Fla.

*Second emergency parachute jump.

Of the previously mentioned total of 809 emergency parachute jumps, made during the period of over 16 years, starting with the jumps made from a burning airship over Chicago, Ill., July 21, 1919, by Messrs. Henry Wacker and John Boettner, up to and including February 27, 1936, 401 were made by Army Air Corps personnel (Regular Officers, 161; Enlisted Men, 94; Reserve Officers, 79; Flying Cadets, 67); 17 by National Guard personnel (12 officers and 5 enlisted men); 81 by personnel of the U.S. Navy (48 Regular officers, 25 enlisted men, 6 Reserve officers and 2 Reserve enlisted men); 36 Marine Corps personnel (20 Regular officers, 13 enlisted men and 3 Reserve Officers); 10 by personnel of other branches of the Army (8 Regular Officers, one enlisted man and one Reserve Officer); and 264 by civilians.

Air Corps personnel, it will be noted, lead in the number of emergency jumps made, but the reason for this is obvious - the type of flying performed by them.

The fact should be borne in mind that the above number of parachute jumps does not mean the loss of aircraft to that extent, for in many instances passengers jumped where pilots were able to make safe landings with no injury to themselves and little or no damage to the aircraft. In one instance as many as six enlisted men "bailed out" of an Army Transport plane, following which the pilot made a safe landing. The Navy equalled this record when six men hastily deserted via the parachute a seaplane flying in the vicinity of Pearl Harbor, Hawaii.

According to the Caterpillar Club Register, there were eight instances where four men took to their 'chutes and sailed down safely to terra firma, sixteen occasions where three men in unison yanked at the rip cord of their parachute and eighty-eight critical moments where two occupants of a plane rapped simultaneously at the portals of the Caterpillar Club for admittance.

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STARTING AVIATION ENGINES IN COLD WEATHER

A Navy Department press release, touching on an extended flight of two airplanes of the Utility Unit of the U.S.S. LANGLEY to Salt Lake City, Utah, and return, states that the main point of interest of the flight was the procedure required for cold weather starting of the airplane engines.

After the failure of a starter gear with temperature at 15 degrees F., it was decided to use more caution. During the remainder of the trip, the following procedure was used whenever the planes were to remain overnight. Upon securing for the night, the oil was drained and placed in containers, ready for heating the next morning. Forty-five minutes before time for starting engines, asbestos lined engine covers were placed over the engines and gasoline stoves, with long metal chimneys which connected to the engine covers, were lighted and placed under the engines. When the engine was thoroughly warmed, the hot oil was put in and the engine started readily. This equipment is kept available by the air line operating in this area during the winter months.

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THE SCOTT FIELD COMMUNICATIONS OFFICE

The Scott Field Radio Communications Office moved on February 27th from the Headquarters building to its new quarters in the Post Operations Office. Last fall the Operations Office was enlarged by PWA workmen, and special quarters were constructed in the enlarged portion for the Radio Communications Office.

The new radio room is equipped with acoustical wallboard to control and dampen voice reception while several loud speakers are in operation and to confine these communications to the radio room. The new quarters are being equipped with more radio apparatus, for it is planned to operate the station on a 24-hour basis as an alert station. For this work three new short wave receivers are being installed. These will be used to copy airplanes in flight as well as adjacent air-alert nets.

The equipment moved from the old quarters consisted of one intermediate frequency, one high frequency and one all frequency receivers Remote controlled equipment consists of one intermediate frequency code transmitter and one intermediate frequency voice and code transmitter.

At present the station has four regular operators. This number, however, will soon be increased.

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TRANSFER OF OFFICERS TO THE AIR CORPS

Special Orders of the War Department, recently issued, announced the transfer of the following-named second lieutenants to the Air Corps on January 29, 1936, with rank from June 12, 1934:

Harvey T. Alness, Cavalry
Paul C. Ashworth, Corps of Engineers
Herbert M. Baker, Jr., Infantry.
John G. Benner, Infantry
Byron E. Brugge, Coast Artillery Corps
William M. Canterbury, Coast Artillery Corps
George B. Dany, Coast Artillery Corps
William M. Gross, Field Artillery
Paul T. Hanley, Infantry
John deP. Hills, Infantry
John M. Hutchison, Cavalry
Richard A. Legg, Infantry
Elvin S. Ligon, Jr., Infantry
Arno H. Luchman, Infantry
Lawson S. Moseley, Coast Artillery Corps
Wilson H. Neal, Field Artillery
Jack J. Neely, Infantry
Frank C. Norvel, Field Artillery
Raymond J. Reeves, Cavalry
Jack E. Shuck, Coast Artillery Corps
Curtis D. Sluman, Coast Artillery Corps
Dale O. Smith, Infantry
William S. Stone, Field Artillery
Hudson H. Upham, Infantry
John W. White, Infantry
Albert T. Wilson, Jr., Infantry
William H. Wise, Cavalry

The above-named officers graduated from the United States Military Academy in June, 1934; were assigned to the Air Corps for flying training with the October, 1934, class, and graduated from the Advanced Flying School, Kelly Field, Texas, on October 12, 1935.

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Effective June 17, 1936, Lieut.-Colonel Davenport Johnson, Air Corps, is relieved from detail as a member of the General Staff Corps and from assignment to the War Department General Staff, Washington, D.C., and is directed to report for duty at Hamilton Field, San Rafael, Calif.

Captains Kirtley J. Gregg and Joe L. Loutzenheiser, stationed at March Field, Calif. and 1st Lieut. Fay O. Dice, at Crissy Field, Calif.; Captain John K. Nissley, on duty with the Organized Reserves of the 9th Corps Area, with station at Crissy Field, Calif, Majors I A. Dunn (Captain) Supply Officer, 1st Wing, G Air Force, and Bernard T. Castor, Executive Officer, Station Complement, March Field, Calif., are under orders to report not later than Augus

25, 1936, to the Commandant of the Air Corps Tactical School, Maxwell Field, Ala., for duty as students in the 1936-1937 course. Majors Dunn and Castor are relieved from temporary rank, effective July 15, 1936.

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ASSIGNMENT OF GRADUATES OF C.& G.S. SCHOOL

The following-named Air Corps officers, now on duty as students at the Command and General Staff School, Fort Leavenworth, Kansas, have, under Special Orders of the War Department recently issued, been assigned to duty at the stations indicated, reporting not later than June 30, 1936, viz:

To Langley Field, Va., for duty with the Headquarters, GHQ Air Force:

Lieut.-Colonel Carl Spatz, Captains John DeF. Barker, Charles C. Chauncey and Walter L. Wheeler.

To the Office of the Chief of the Air Corps, Washington, D.C. - Majors Gerald E. Brower, Harry H. Young, Captains Charles Y. Banfill, and Morton H. McKinnon.

To Langley Field, Va., for duty with the GHQ Air Force - Captains Warren R. Carter, Howard A. Craig, Edgar E. Glenn, Caleb V. Haynes, James P. Hodges, Vincent J. Meloy.

To March Field, Calif., for duty with GHQ Air Force - Captains William S. Gravely, Howard K. Ramey, Victor H. Strahm.

To Barksdale Field, La., for duty with GHQ Air Force - Captain Harry A. Johnson.

To Seattle, Wash. - Captain John D. Corkille for duty as Air Corps representative at the plant of the Boeing Aircraft Company.

To Kelly Field, Texas - Lieut.-Colonel Carlyle H. Wash for duty as Assistant Commandant of the Advanced Flying School.

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CHANGES IN STATION OF AIR CORPS OFFICERS

To Panama: Colonel Jacob E. Fickel from duty as Commandant of the Advanced Flying School, Kelly Field, Texas, to duty as Wing Commander, 19th Composite Wing, Panama Canal Zone, about July 3rd. - Lieut.-Colonel Benj. G. Weir, from duty as Instructor, Infantry School, Fort Benning, Ga., about July 3rd.

To Philippines: 1st Lieut. Frederick A. Pillet, about Sept. 16, 1936, from duty as student, A.C. Technical School, Chanute Field.

To Randolph Field, Texas: Lieut.-Colonel William B. Mayer (Major). Relieved from temporary rank upon departure from Panama.

To Langley Field, Va.: Major Frederick I. Eglin, on duty with staff and faculty, Air Corps Tactical School, Maxwell Field, Ala., to duty with Headquarters, GHQ Air Force.

To Hamilton Field, Calif.: 1st Lieut. Carl A. Brandt, from Philippines, for duty with GHQ Air Force. - 2nd Lieut. Edward Flanick (Field Artillery) Air Corps, from the Advanced Flying School, Kelly Field, Texas.

To Brooks Field, Texas: Lieut.-Colonel J.H. Houghton (Major), with 6th Composite Group, Panama. Relieved from temporary rank upon departure for new station.

To Barksdale Field, La.: Captain John F. Guillett (1st Lt.) 7th Obs. Squadron, Panama. Relieved from temporary rank upon departure for new station.

To Mitchel Field, N.Y.: Captain Joel E. Mallory (1st Lieut.) 74th Pursuit Squadron. Relieved from temporary rank upon departure from Panama. - 2nd Lieut. Paul Burlingame, Jr., detailed to Air Corps March 4, 1936, relieved as student at Advanced Flying School, Kelly Field, and assigned to duty with GHQ Air Force.

To Chicago, Ill., for duty as Air Corps Procurement Planning Representative: Captain James B. Jordan, from Advanced Flying School, Kelly Field, Texas.

To Wright Field, Dayton, Ohio: Major Hubert V. Hopkins and Captain Merrick G. Estabrook, upon completion of course of instruction at the Army Industrial College, Washington, D.C.

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DETAILS TO THE AIR CORPS TECHNICAL SCHOOL

The following-named Air Corps officers have been assigned to duty at the Air Corps Technical School, Chanute Field, Rantoul, Ill., as students in the courses of instruction indicated:

Communications Course:

Captain John F. Wadman (1st Lieut.) 73rd Attack Squadron, March Field, Calif. Relieved from temporary rank July 15, 1936.

1st Lieut. John J. Hutchison, from Hawaii.

Airplane Maintenance Engineering-Armament Course:

Captain Narcisse L. Cote (1st Lieut.) 4th Composite Group. Relieved from temporary rank upon departure from Philippines.

Captain Clarence T. Mower (1st Lieut.) 25th Bombardment Squadron. Relieved from temporary rank upon departure from Panama.

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TEMPORARY PROMOTIONS

To Major:

Captain Bayard Johnson assigned as Squadron Commander, 87th Pursuit Squadron, Maxwell Field, Ala., March 11, 1936.

Captain Samuel C. Eaton, Jr., assigned as Squadron Commander, 14th Bombardment Squadron, Bolling Field, D.C., March 9, 1916.

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Captain Ralph E. Fisher, Air Corps, has been relieved from duty with the 16th Observation Squadron, Langley Field, Va., and assigned to the Station Complement.

Major Charles D. McAllister (Captain) has been relieved from duty as Squadron Commander of the 87th Pursuit Squadron, Maxwell Field, Ala., and from temporary rank, March 11, 1936, and directed to report to the Commandant of the Air Corps Tactical School for duty.

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Captain Orvil A. Anderson, Air Corps, co-holder with Capt. Albert W. Stevens of the world's record flight of nearly 14 miles into the stratosphere, was presented the Oak Leaf Cluster citation for his participation in the successful flight made on November 11, 1935, near Rapid City, S.D. The presentation was made on Saturday morning, March 7th, before a formation of Kelly Field troops, the corps of Flying Cadets and officers of the field, by Brigadier-General James E. Chaney, Commanding General of the Air Corps Training Center.

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PRESIDENT ROOSEVELT INVITED TO SAN ANTONIO

An elaborate leather-bound invitation to President Roosevelt to visit San Antonio, Texas, in June, and lay the cornerstone of the new Federal Building, was carried to Washington by Captain W. H. Hardy, Air Corps.

Following a breakfast given by the San Antonio Chamber of Commerce, and attended by Colonel Jacob E. Fickel and Captain Hardy from Kelly Field, the group went to the Alamo, where Captain Hardy purchased air mail stamps from Postmaster Dan Quill, who cancelled them in the Alamo. This is the first time that stamps have ever been sold or cancelled in this historic shrine. The stamps themselves are special issue commemorating the 100th anniversary of the fall of the Alamo. Following the ceremonies in the Alamo, the entire group went to Kelly Field to witness the departure of Captain Hardy, who took off at 9:45 a.m. with Sergeant W.O. Trager as mechanic, for Washington, D.C.

It is planned to have the invitation formally presented to the President by a group of Texans, including Vice President Garner, Senators Connally and Shepard, and Congressman Maverick.

Stamp collectors at Kelly Field have been casting longing eyes at the photographs of this special cover and have assured the News Letter Correspondent that it will find a sincere welcome in the President's unusual collection of stamps.

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ALAMO SHOWERED WITH LONE STARS

A shower of 25,000 blue, silver and gold paper stars, bearing the inscription "The Alamo, 1836-1936," was scheduled to be dropped upon the historic Alamo, at San Antonio, Texas, from a height of 3,000 feet, at 6:00 p.m., on Friday, March 6th, from a formation of nine Kelly Field airplanes. This flight of Bombers was to constitute a part of the celebration of the 100th anniversary of the fall of the Alamo with the following-named Air Corps officers as pilots of the planes: Captains W.E. Whitson, L.S. Smith, J. Smith, Orvil A. Anderson, J.M. Fitzmaurice, W.G. Bryte, D. T. Spivey, 1st Lieuts. R.D. Butler, W.L. Kennedy and E. J. Timberlake.

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Captain John W. Monahan, Air Corps, who recently completed a tour of duty as Assistant Military Attache at London, was a recent visitor at Kelly Field, where he had served for many years and was for some time the Chief of the Bombardment Section. After a trip to California for some deep sea fishing, Captain Monahan will report to Maxwell Field, Alabama, to attend the Air Corps Tactical School.

OBITUARIES

Lieut. Robert K. Giovannoli

Fate decreed that the man who was selected to receive the Cheney Award for the year 1935, for an act of extraordinary heroism in a humanitarian interest, should die before the actual presentation thereof.

Flying a Pursuit airplane at Logan Field, near Baltimore, Md., at about noon on Sunday, March 8th, Lieut. Giovannoli had just started to zoom his plane from a low altitude when its right wing crumpled. Instantly the airplane careened out of control and crashed in the northwest section of the airport. Lieut. Giovannoli was thrown clear of the wreckage but was dead before help could reach him.

Lieut. Giovannoli, who would have been 32 years of age on March 29th, was selected for the 1935 Cheney Award for his outstanding bravery in aiding in the rescue of Major Ployer P. Hill, Air Corps, and Leslie Tower, Boeing Test Pilot, who were trapped in the flaming wreckage of a Boeing bombing plane when it crashed at Wright Field on October 30, 1935. For this act of valor he was also given the Soldiers' Medal.

Lieut. Giovannoli was born in the District of Columbia and lived in Washington until he was about 13 years of age, when his family moved to Lexington, Ky. He graduated from the Air Corps Training Center in 1928, and was commissioned in the Air Corps, Regular Army, on May 8, 1930.

Flying Cadet Marion Reeder

Taking off from Fort Bragg, N.C., on the morning of March 7th on his return flight to his station at Langley Field, Va., Flying Cadet Marion Reeder was instantly killed when his plan crashed. The cause of the crash has thus far not been determined.

Cadet Reeder was born at Woodland, Calif., September 7, 1912. He attended high school at Atlanta, Ga., and graduated from the University of Georgia, Athens, Ga., in 1934. Appointed a Flying Cadet, he graduated from the Air Corps Training Center in June, 1935, and was assigned to active duty under his Cadet status at Langley Field, Va.

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School started again for the officers over in the Pilots' room of the 50th Squadron, Luke Fiel T.H., on Monday, February 10th. Promptly at 9:0 a.m., the officers assembled with pencil and pap to learn from Capt. J.G. Fowler the latest devel ments in Navigation, Dead Reckoning, Celestial Navigation, which for all their high sounding te minology means nothing more than - 'How to get where you want to go without going somewhere els

When the "Duck" comes out of the Depot all set to go places, it is hoped by the officers who a now busy scratching out theory on the subjects as above, that they will be able to get permiss to make extended flights at sea and to the other islands to put into practice some of the items Captain Fowler has put on the blackboard.

★ Air Corps ★
News Letter

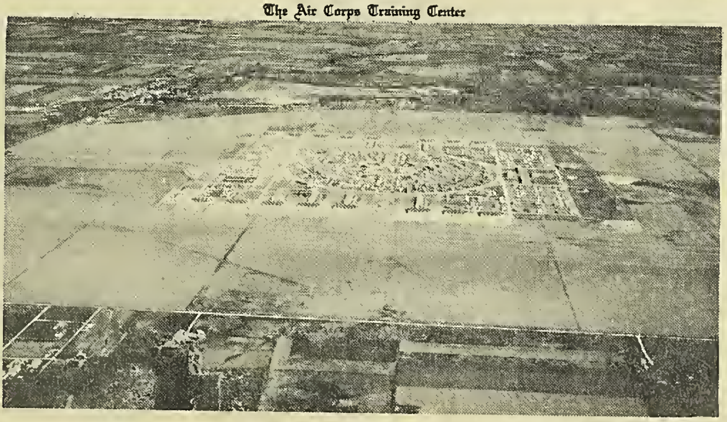
Issued by the Office of the Chief of the Air Corps,
War Department, Washington, D. C.

School of Aviation Medicine, Randolph Field, Texas

Hangar line, Randolph Field, Texas

Brigadier General James E. Chaney,
Commanding
The Air Corps Training Center

Kelly Field, Texas



Randolph Field, Texas

Vol. XIX April 1, 1936 No. 7

VOL. XIX AIR CORPS NEWS LETTER NO. 7.

Information Division
Air Corps
April 1, 1936
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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YESTERDAY AND TODAY

By Brigadier General James E. Chaney, Air Corps

AT the beginning of the World War, France and England were the strongest belligerents in the air. They were the first nations to appreciate the military possibilities of the airplane and to prepare for its use. Germany had concentrated her main efforts in the development of dirigibles but also had kept well abreast of the progress in airplane development. The Air Corps at that early date was a separate branch of the Army both in France and England, the Royal Flying Corps having been established as a separate branch in England as far back as April, 1912. In Germany and Italy the Air Service was part of the Communications Troops. When we entered the war in 1917, our Air Service was a section in the Signal Corps.

At the close of the war, Great Britain was the strongest nation in the air. By that time England had formed an Air Ministry coequal with the Ministries of War and Navy. France had an Under-Secretary of State for both military and naval aviation, and Italy, Germany and the United States had changed over to the separate branch organization.

During the war period, tremendous strides had been made in developing new types of airplanes. Initially the Observation type only was used. Then it soon became apparent that it was just as important to prevent the enemy from getting information as it was to secure it for one's own forces. This resulted in air fighting and the beginning of the Pursuit airplane. Pursuit airplanes also forced mutual protective measures resulting in formation flying. They operated in flights, squadrons and groups, facilitated the carrying out of observation and bombing missions and tried to prevent the enemy from doing so.

Then the Bombardment airplane was developed for the strategical bombing of industrial centers and key positions in lines of communications. Light Bombers and Pursuit planes were used in special situations against ground troops. Bombardment operations were being undertaken on an ever-increasing scale by the Allies, and had the war continued these operations against Germany would have increased at least sixfold by the spring of 1919.

The Germans were the first to develop and utilize a special attack airplane and attack units. This was in 1917. However, the French and the British recognized the value of Attack aviation under certain conditions and used light bombing, pursuit and observation units for this purpose in practically every major operation in 1918.

At the conclusion of the World War and as a result of the experience gained thereby, it was apparent:

That Observation aviation, with developments in photography and radio, would play continuously more important tactical and strategical roles.

That two new classes of aviation had been found to be essential, namely, Bombardment and Pursuit.

That, in addition to the direct cooperation with ground units, an air force, composed of all classes of aviation, was a new and effective weapon for executing distant strategic missions to further the plan of the armies as a whole.

Today France is the strongest nation in the air. England has retained its Air Ministry. Both France and Italy have changed to Air Ministries since the war. Russia and Germany are building up strong air organizations under their Ministries of National Defense. All of these countries, due to their geographical proximity to each other and their contiguous frontiers, consider their Air Forces as their first line of defense. In Japan and the United States, military aviation is being built up as arms of greatly increasing importance in both the Army and the Navy. This is due to their greater geographical isolation and to the fact that their navies are considered their first line of defense.

Today military airplanes are far superior to those of 1918 in speed, radius of action, useful load, rate of climb, ceiling, reliability and defense in the air. These factors, together with improvements in navigation equipment, radio and armament, have greatly amplified their strategical and tactical roles both as to scope and effectiveness. All efforts towards an all-purpose airplane have been failures, and specialization in types continues in all countries. Today the leading nations have corps and army Observation, long range strategical Observation planes of land, flying boat and amphibian type, light and long range Bombardment, single-seater, two-seater and multi-seater Pursuit, Attack airplanes, Cargo and Troop Transports, and Primary, Advanced and specialized training types. The outstanding developments today are in range, speed and military loads, use of cannon and multi-machine guns, and in the ability of Bombing aircraft to operate readily and effectively from floating bases.

Based on press reports of air maneuvers in the leading countries in recent years, it is apparent:

That today Bombardment aviation is the most important and main air arm and is rapidly playing an increasingly major role year by year.

That Bombardment, Pursuit, Attack and Observation operate as an Air Force to get the best results; that while each in its action contributes to the success of the bombardment mission, Bombardment when in the air neither requires nor expects protection other than its own defensive means.

That Attack aviation is no longer a weapon of opportunity, for, due to its greatly increased powers, remunerative targets are always available.

That initial results may well be the decisive factor in modern war.

That the immediate and successful employment of an air force and highly mobile mechanized ground forces permits the assumption of the initiative and paves the way for retaining it both in the air and on the ground.

That without freedom of action in the air, without adequate information of the enemy, and with his supply lines harassed and main reserves attacked and delayed, a belligerent is helpless in modern war.

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"BIRD OF PARADISE" GOES TO THE MUSEUM

The Fokker airplane "Bird of Paradise" in which Captains Lester J. Maitland and Albert F. Hegenberger made their historic flight from the West Coast to Hawaii in June, 1927, is now being prepared for shipment at the Hawaiian Air Depot, Luke Field, T.H., preparatory to shipping it to the Aeronautical Museum at Wright Field, Dayton, Ohio. The "Bird of Paradise" had been out of commission for several years and was stored in a building on the Schofield Barracks Military Reservation.

RADIO PRACTICE AT LUKE FIELD

The students of the Wing Communications School at Luke Field, T.H., used squadron equipment in an interesting radio project recently which lasted three days. Students, in groups of three, set up a net of six stations composed of squadron permanent and field ground sets. All sets were on Luke Field, but scattered around the airdrome.

On the first day the students met the expected difficulties of putting their newly-learned theory into practical use. On the second day there was a tremendous improvement, and on the third and last day the net was working smoothly and enthusiasm was so high that the students wanted to continue the project. The Luke Field Correspondent states that Lieut. D.A. Cooper, Air Corps, is to be congratulated on putting the communications instruction across in such a practical and interesting manner.

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AIR CORPS SERGEANT FLIES HIS OWN

Sergeant Truman F. Taylor, of the 4th Observation Squadron, Luke Field, T.H., has distinguished himself by constructing a commercial airplane. This work was, of course, done during his spare time. According to the Luke Field Correspondent, Sergeant Taylor's work is even more commendable than it might be, due to the fact that his duties do not require him to work on airplanes. The Sergeant has been in the 4th Squadron since his enlistment in 1927, and during practically the entire time he was assigned to the armament section. Possessing a student pilot license, he flies the ship himself and, according to all reports, the plane handles very well.

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WORK STARTED ON HICKAM FIELD PROJECT

The work of transforming a small village and hundreds of acres of algaroba-covered land into a future great airport is slowly forming into shape at Hickam Field, according to the Honolulu STAR-BULLETIN.

The village of Watertown is fast becoming a thing of the past as the many small houses are being torn down and salvaged or moved away. The many, many acres over which algaroba grew so thickly as to be almost impenetrable a few months ago, now lie covered with thousands of cords of wood which is being hauled away daily in convoys from Schofield Barracks and other posts.

According to Captain Howard B. Nurse, Constructing Quartermaster, the biggest job of all preliminary work is wrecking and clearing away the small homes of the former residents of the town and clearing the land of trees and undergrowth.

(Continued on page 6).

RANDOLPH FIELD AND ITS HISTORICAL SIGNIFICANCE

BACK of every great undertaking that has succeeded may always be found that fighting spirit of a few who, from the beginning, believed in it way down deep in their hearts, labored for it without stint, gave it their time, and turned a deaf ear to any suggestion of possible failure.

Without such men many great enterprises would never have become realities. The Air Corps being no exception to this rule, it is therefore fitting at this time that we acquaint our readers with the circumstances of the acquisition of Randolph Field and the personnel who, when a new flying field was first rumored, envisioned its meaning, realized its possibilities, and resolved that this great undertaking should be born.

In recalling the names and the work of these pioneers of aviation, we do not desire to belittle the courage and efforts of those who have carried on the successful completion of this project. However, without those first few to blaze the trail, Randolph Field would still be a vision and not a reality.

The first intimation that a new flying field was to be built in or around San Antonio followed the establishment of the Air Corps Training Center on September 1, 1926, then located at Duncan Field, Texas. Major-General M.M. Patrick, then Chief of the Air Corps; Brigadier-General Frank P. Lahm, then Commanding General of the Air Corps Training Center; Brigadier-General James E. Chaney, then commanding officer of Brooks Field, and Major-General Frank M. Andrews, then commanding officer of Kelly Field, recommended the concentration of all primary training at San Antonio. In view of the excellent climatic condition and suitable terrain, it was considered ideal for flying training throughout the year.

Various suggestions for new training fields were made, and on February 19, 1927, Congressional action was taken and funds were provided for the construction of a new flying field. These funds, however, were withheld until the land on which to build was made available to the Government.

A board of officers was appointed by the Air Corps Training Center in April, 1927, to submit plans and specifications for a model flying field that would serve the purposes in mind.

During the ensuing months, many possible sites were inspected by this board and representatives of the San Antonio Chamber of Commerce, but none possessed the necessary requirements. Finally, in November, 1927, this committee visited a proposed site on the south of Houston Highway between Schertz and Converse. They agreed unanimously upon it as being the most satisfactory location available and recommended its procurement.

As a result of the efforts on the part of the city of San Antonio, its Chamber of Commerce and many interested individuals, the preferred site, consisting of approximately 2,300 acres, was secured at a cost of $546,000. It was offered to the United States Government on December 31, 1927, as a gift, in fee simple, and was subsequently accepted by the Acting Secretary of War on August 19, 1928.

Early in 1927, when it was definitely established that a new Air Corps Training Center would be built, recommendations for a suitable name were requested by the War Department. May we deviate here and relate one of the little ironies of fate which deals with the name of the officer for whom the field was named. A memorandum was sent out to the Commanding Officers of Brooks, March and Kelly Fields, requesting an appropriate designation for the new field. Captain William Randolph, at that time Post Adjutant of Kelly Field, was requested to take this matter under consideration. He presided at subsequent meetings of Kelly Field officers when several possible names were discussed and discarded. His ultimate recommendations are not available; a short time later, or to be exact, on February 17, 1928, Captain Randolph met his untimely death in an airplane crash at Gorman, Texas. Very strange, but fittingly, "RANDOLPH FIELD" was named in memory of Captain Randolph, a native Texan, a war-time officer, a pilot, and one who gave his life on his native soil to the progress of aviation. The name "RANDOLPH FIELD" was recommended to the War Department by General Fechet, then Chief of the Air Corps, as a fitting tribute to "BILL." It was accepted and officially announced in orders of that Department, dated September 27, 1928.

The actual construction of Randolph Field was begun on October 11, 1928. The first buildings were occupied by school troops on October 15, 1931, when the Primary Flying School and the School of Aviation Medicine from Brooks Field, the Air Corps Training Center Headquarters from Duncan Field, and the Primary Flying School from March Field, Calif., took up permanent residence. The project as it now stands represents a total investment of some $12,000,000 exclusive of aircraft, supplies and equipment.

Randolph Field was officially dedicated on June 20, 1930.

The land, on which stands the most complete and modern air training center in the world, consists of 2368 acres, of which 400 acres in its geometric center are confined to the building area. The remaining 2,000 acres, comprising four distinct landing areas, known as the "NORTH," "EAST," "SOUTH" and "WEST" fields, completely surround this central web-like pattern of buildings and streets.

Looking south from the main entry, one sees the Administration Building, which is an ingenious architectural achievement in modernistic design, and which houses the Photo Section, administrative offices, War Department theatre, and the post office. This building, which is the predominating structure on Randolph Field, rises to a height of 175 feet and overlooks the surrounding plain. At night, the beams from a powerful revolving beacon atop the tower can be seen by flyers for a distance of fifty miles.

The circular residential area in the center of the great flying field is of Spanish architecture. In fact, all buildings on the post show the Spanish influence. In the exact center of the building area stands the Officers' Club. It is beautifully appointed, having a ballroom, grill, card rooms, barber shop and lounges, and is one of the finest clubs in the service today. The officers' homes surround the club, being symmetrically spaced on the concentric circular streets and radial spoke-like roads. The majority of the homes are of two-story design. However, there are a number of the bungalow type.

Immediately surrounding the central circular quarters' area is a square pattern of other buildings; shops, hangars, barracks, etc. The administration building previously mentioned, with its majestic tower, is the key-structure of this group and is the point of orientation for the casual visitor confused by the maze and similarity of the many streets.

Flanking the administration building at the left of the main double boulevard entrance to the field stands the Post Chapel, a recent addition to the station. It is a magnificent structure of Spanish design, where one is privileged to worship regardless of religion, creed or nationality.

Just across the main traffic artery is located the Post Exchange. This building consists of three separate wings, octagon-shaped, with patio in the center, beautified by a cool tiled fountain with sparkling goldfish. One wing houses the Post Exchange proper; the second is occupied by a grocery store and meat market, and the third by a restaurant and beauty parlor.

Extending the full length of the building area and forming the boundary on the west and east sidesare eight hangars in a line. Each hangar measures 220 feet in length, 110 feet in width and is 47 feet high. In the center of the line of hangars on both the east and west sides is located the stage operations and parachute building. On the northwest boundary, two large warehouses house the Post Quartermaster and the Air Corps Station Supply.

The personnel of the field consists of approximately 200 officers and 1500 enlisted men. This personnel includes student officers and flying cadets. To house this group there are 174 houses for married officers; 80 sets of bachelor officers apartments, in two buildings of 40 apartments each, and 168 sets of noncommissioned officers' quarters. There are five sets of barracks accommodating 250 enlisted men each, and one barracks for 300 men. Also, just south of the quarters' circle are two sets of barracks which accommodate 400 flying cadets. Nearby, and convenient, is the academic building which houses the classrooms for instruction in ground subjects, as well as a radio laboratory and technical library.

The post hospital, tangent to the quarters' area, operates wards totalling a capacity of one hundred men. In addition thereto, there are 26 private rooms to handle special cases. Adjacent to the hospital is the School of Aviation Medicine, the only school of its kind in the world, where the necessity for physical standards for aviation pilots is taught to flight surgeons.

The reservation is approximately two miles square, with the building area in the center. The advantages of this type of field are (1) It provides a flying line of sufficient length to accommodate the required number of airplanes; (2) It provides a clear field irrespective of wind directions; (3) It is possible to get airplanes from hangars, off the field, and vice versa in the safest, most expeditious and most efficient manner possible; (4) Taxying of airplanes is reduced to a minimum; (5) Maintenance, operation and school activities are more concentrated, tending towards economy of effort and transportation.

The gigantic gasoline distribution system in use is a marvel of engineering. Briefly, it is described as follows: It is known as the Aqua System and operates on the hydraulic principle and utilizes two laws of nature - first, that gasoline is lighter than water; and, second, that gasoline and water cannot mix. Gasoline is unloaded from railroad tank cars into eight storage tanks by gravity and is then forced by water pressure, obtained from the post water system, to four auxiliary storage tanks located adjacent to the flying line. The same principle of water pressure is applied to each auxiliary tank to force gasoline to numerous servicing pits. An operator or mechanic desiring to service an airplane merely closes an electric switch located in the

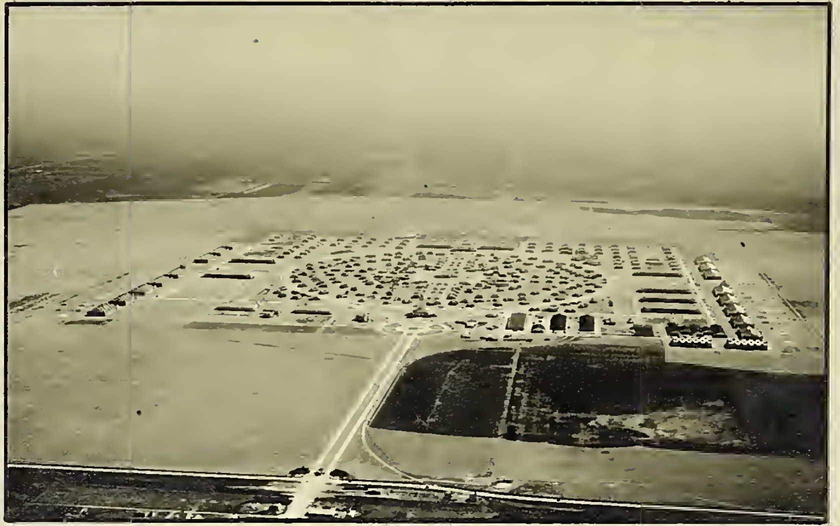
POST CHAPEL

CADET INSTRUCTION

CADET AREA

CADET ADMINISTRATION

TRAINING PLANE


RANDOLPH FIELD TEXAS

TRAINING PLANE

CADET DRILL

CADET BARRACKS

ADMINISTRATION BUILDING

ACADEMIC BUILDING

CADET INSTRUCTION

OFFICER'S CLUB

pit to secure a metered flow of gasoline from his servicing hose. There are 32 individual servicing pits connected through a complicated system of pipes to the 300,000-gallon gasoline storage system. Any dirt which may be in the floating gasoline sinks into the water below. Since the water keeps the gasoline pressing tightly to the roofs of the tanks, there is no room for air in the tank, which prevents gas fumes forming explosive vapor - truly a safe and ingenious idea.

Water is obtained locally from wells and pumped electrically to the tank concealed in the tower of the administration building, from where it is distributed by gravity to the entire field. Of the nine wells sunk, five are active and four are inactive. Only three of the wells are operated at one time, furnishing a combined output of 1,725 gallons per minute. This quantity is barely sufficient in the summer season and presents a future problem for the Quartermaster Department.

The following facts relative to the reservation area in general are of interest. There are 35 miles of field drainage. The entire building area is planted with trees, shrubs and grass. All of the flying field is planted with bermuda grass. There are 18 miles of paved roads. The utilities are provided by means of 12 miles of water mains, 11 miles of sewers, and 10 miles of gas lines. There are also many miles of electric light and telephone wiring, all of which are underground.

Broad, tree-lined boulevards, with their parallel drives separated by wide strips of lawn and gardens; ornamental rock piles with sparkling fountains; lily pools and exotic flower beds with rare varieties of cacti, sotol and yuccas, are all immensely effective in making Randolph Field the show spot of the southwest, if not the most beautiful in the world.

Randolph Field is a thriving community of which Bexar County and the State of Texas may well be proud, as it is today virtually a city within itself, with a population of approximately 3,000, of which 1,700 are military personnel and the remainder civil members of the military family head, civilian employees and domestic help.

Randolph Field is also a station that the Air Corps in general and San Antonio in particular may point to with pride. It is not only an attraction and point of interest for visitors, but it is a vital part of the defensive scheme of the United States. This military city is a well organized, disciplined and controlled unit which, as such, contributes materially to the prosperity of the surrounding country, not alone because it is a physical attraction and an artistic asset to the State, but because of its great monthly payroll and the associated business enterprises which it requires for its existence.

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ATTACK DEMONSTRATION AT MAXWELL FIELD

Coordination of the Attack Aviation course at the Air Corps Tactical School with the present work carried on by the 3rd Attack Group of Barksdale Field was effected in part by a demonstration at Maxwell Field, Ala., on January 27th. Nine planes of the 8th Attack Squadron, commanded by Major Lester J. Maitland, flew to Maxwell Field on the 26th and stood by to undertake such missions as ordered. Unfortunately, the demonstration was limited to two problems due to the lack of facilities to enable the students to view the numerous types of missions possible.

The first problem called for the spraying of an enemy airdrome with chemical, and was accomplished by means of a low altitude approach in an echelon of elements, each plane covering a predetermined area. The second problem, carried out in much the same manner as the first, was an attack with parachute bombs, perhaps the most impressive performance. Upon the completion of these, the squadron drilled in both tactical and close order formation emphasizing column, rallies and concluded by simulating a group using code signals. The drill gave evidence of excellent air discipline and ease of maneuverability.

During the demonstration, a receiving set, adjusted to the frequency used by the squadron, enabled those on the ground to hear all commands given by radio. The Third Attack Group Commander, Lieut.-Colonel E.L. Naiden, was present to explain the maneuvers and answer questions.

Officers of the 8th Attack Squadron who participated were: Major Maitland, Captains R.F. Tate, K. Crosher, P. Meisenholder, Lieuts. Sweeney, Kunish, Vidal, Lawing, Carney and Templeton.

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MORE FIRST PURSUIT ENLISTED MEN SENT TO BARKSDALE FIELD TO ASSIST IN GUNNERY

In addition to the eleven enlisted men of the 1st Pursuit Group already at Barksdale Field, Shreveport, La., assisting in gunnery operations of members of this Group, twenty-seven enlisted men were transported from Selfridge Field, Mich., to Barksdale Field on March 4th, last.

AIR CORPS ACTIVITIES AT MOFFETT FIELD, CALIF.

By the News Letter Correspondent

On October 25, 1935, the Navy Department formally transferred their partly developed western airship base to the Army Air Corps. Lieut.-Colonel Horace N. Heisen, Air Corps, with a station complement of six officers and 140 enlisted men from Rockwell Field, Calif., formed the original garrison, which was later augmented upon the arrival of the 19th Airship Squadron from Langley Field, Va. The garrison today consists of these two units; the first having four Air Corps officers, a Quartermaster, and one Medical Corps officer. The latter unit has three Air Corps officers. In January, Major Clarence B. Lober, Air Corps, succeeded Lieut.-Colonel Heisen as commanding officer upon the latter's transfer to the Letterman General Hospital, in addition to retaining command of the 19th Airship Squadron.

The Naval Evacuation unit completed their evacuation of the field soon after January 15, 1936. Army machinery and equipment soon were in place, and the Station Engineering Department began to function.

On February 1, 1936, the 19th Airship Squadron resumed tactical training and the conduct of engineering tests which had previously been held in obeyance pending a resumption of operations. Slight handicaps have somewhat hindered airship operations. At first the most serious of these was the maneuvering of the airship on the wet field and the subsequent "miring in" of the mobile mooring mast. This condition is being corrected by applying mud-scrapers to the wheels of the mast, and by providing crushed rock approaches to the south hangar entrance. Valley fogs are an occasion for concern, particularly upon the return of the airship from cruises extending overnight. The closeness of the mountain ranges bounding this valley on the east and west and the presence of other obstacles, such as the 600-foot commercial radio mast located six miles to the north, point to the necessity for extreme caution during foggy periods. This is particularly true during this period when the station is awaiting receipt of a portable radio beacon and the return of the airship's radio compass, recently transferred to the Materiel Division for modifying changes.

To those not acquainted with the station, the following points may be of interest: Moffett Field is located on the Bay Shore Highway to San Francisco, which is forty miles to the north. Palo Alto is six miles to the north, and San Jose twelve miles to the south of the field. Mountain View, a city of 6,000, is but one and one-half miles from the field and the place of residence for the majority of military personnel on a commutation status. This group must of necessity use their own transportation to and from the field.

The field boasts of an excellent commissary, post exchange, and motion picture theatre with three [illegible]. All buildings are of the Spanish California type of architecture, except the airship hangar. There is one large barracks in which is operated a consolidated mess. This building can accommodate 450 enlisted men. There are no noncommissioned officers' quarters, although temporary buildings have been occupied by two families. Nine sets of quarters for married officers, five of which are of the field officers' type, form one section of the post. A bachelor officers' quarters, consisting of thirty apartments, occupies a balancing position opposite the barracks and is separated from the barracks by the parade ground. The hospital, located next to the bachelor officers' quarters, is balanced on the other side of the parade ground by the recreation building. The effective landscaping of the grounds, together with the attractive arrangement of buildings and their distinctive type of architecture, might easily suggest the thought, "most beautiful of posts."

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HICKAM FIELD

(Continued from Page 2).

This preliminary work is almost completed Only a few of the houses still remain and they are in the process of being moved. The brush is cleared away and the wood is stacked in piles of a truckload each and fast being hauled away.

Some of the future streets are already laid out, named and partly graded, all streets being named for officers and soldiers of the Air Corps who have been killed or who have died in service in Hawaii.

In Captain Nurse's office are the plans for the whole new post, showing in detail the arrangement of headquarters and administrative buildings, hangars, barracks, officers' and noncommissioned officers' quarters, recreation centers and streets.

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A NEW KIND OF A CLUB

An organization recently has been started in the City of Shreveport, La., calling itself "The Amigators' Club." Its members are given courses in "Amigation" and allied subjects by Captain Albert Wood, formerly of the Air Corps. In addition, those desirous of so doing are to be given instruction in flying. A great deal of publicity has been given this organization and the leaders propose to do all in their power to advance aeronautical knowledge.

G.H.Q. AIR FORCE

THE COLD WEATHER TEST FLIGHT

By the Barksdale Field Correspondent

The 55th Pursuit Squadron, under the command of Major Armin F. Herold, left Barksdale Field on January 30th for Mitchel Field. This Squadron of 20 pilots and P-26A airplanes was a part of the winter test group which conducted tests of cold weather equipment from February 1st until February 15th.

Bad weather barred the southern route to New York. When the time came for the take-off, it was decided that the northern route would be used. This was sad news to many of the pilots. Instead of two or three more days of warm southern climate, they were taken right into the cold wave that had been gripping the central U.S. for days. At Louisville, the next morning after leaving Barksdale Field, several of the planes refused to start. Many suggestions were handed out as to how to start motors in cold weather. Finally, all but four were started, and the Squadron landed at Dayton in ten degrees below zero weather. From Dayton, all planes (the four balking engines had rejoined the flight) went to Bolling Field. Here bulkheads were cracked in the tails of two planes, making it necessary that they be ferried to Middletown Air Depot for minor repairs. The next morning a Transport plane ferried the pilots of the two damaged planes the rest of the way to Mitchel Field, where the winter test was getting under way.

Heavy equipment was issued to the pilots for use in the cold weather, and during the course of the day it was nothing to see some weary looking pilot sitting in a snow drift complaining of the heat.

At Mitchel Field the Squadron went on the alert each morning and awaited radio orders. All maneuvers were radio-controlled, and orders were radioed from the central plotting room of a simulated observation net. At the end of each problem, all machine guns were fired, the airplanes were staked down upon the ice-covered field and were barred from anything that even looked like a hangar.

Lieut. Strother and his crew of Selfridge Field mechanics were busy after each problem. Planes had to be covered and maintenance had to be performed in zero weather. In the morning before the sun had risen, the mechanics were down on the line starting the fire pots, placing them under the engine tents and standing by watching very carefully until the engines were warm enough to crank. Let it be said right here that these men never failed once at starting engines during the entire maneuvers. They knew their fire pots.

On the 7th day of February, the pilots prepared their equipment for an early take-off for Burlington, Vermont. It seems that they all welcomed this change of scenery and were glad to escape the lure of the big city.

At Burlington, Vermont, the Pursuit problem was "The defense of the Burlington area." No observation net was used, and all work was done by patrol method. The missions were much longer, and some were scheduled for three hours' duration. The "Enemy" aircraft were Bombardment and Attack planes from Concord. These planes would come through at different intervals and in different sized formations.

The Burlington Airport was used for the Pursuit base. Runways were plowed through the 18-inch snow that covered the airport. It was this snow, piled up some five or six feet high along these runways, that Lieut. Desmond had the misfortune of hitting while taking off one morning. His plane was completely wrecked, but he escaped without a scratch. He was, indeed, very fortunate.

Another piece of tough luck hit the Squadron that same morning. As he landed, Lieut. Minnis overshot the runway and his plane turned over on its back in a snow bank. Minnis was unhurt and his plane, with a few minor repairs, was flown during the rest of the maneuvers.

The temperature encountered varied from ten degrees above zero to twenty degrees below zero on the ground. One pilot reported to Captain R.E. Lee, the surgeon, with fingers frozen, while another had his face frozen. A good bath in the snow fixed these frozen individuals and they continued with their flying.

While at Burlington, Vt., the Squadron lived at Fort Ethan Allen, and members thereof were warmly received by many of their old army friends, and the citizens of Burlington. The Squadron was delightfully entertained by both of these groups and made many pleasant contacts which will long be remembered.

After all the Attack and Bombardment airplanes had been "shot down" and the Concord Airport "destroyed," the maneuvers ended on February 15th. The Squadron proceeded to Mitchel Field for a check-up on planes before departing for home. Bad weather set in as soon as the Squadron landed at Mitchel, and the meteorological expert said that it would continue for several days. His statement was correct, and the Squadron did not leave until the 19th. After an overnight stay at Bolling Field, the rest of the trip was made via Spartanburg and Maxwell Field in one day. Despite the beauties of the frozen North, home looked especially good to all of the pilots when they landed after dark on a rainy night at Barksdale Field.

The 13th Attack Squadron, under the command of Major E.M. Morris, departed from Barksdale Field at 10:30 a.m., Tuesday, January 28th, for the cold weather test flight. This flight was made up of ten officers and ten enlisted men. Captain W.P. Sloan was sent ahead to Mitchel Field as advance agent and contact man. This was a very effective method of assuring cooperation and attention from the ground troops at the points where necessary stops were made for gasoline, etc. The flight to Mitchel Field as our first base of operations was made without mishap. Intermediate stops were made at Jackson, Miss.; Maxwell Field, Ala.; Candler Field, Ga.; Pope Field, N.C., and Bolling Field, D.C. The weather on this trip seemed extremely cold to the orchids nurtured in the warm and sunny climes of Louisiana and Texas and to everyone seemed a bad omen of the times to come.

Upon arrival at Mitchel Field, all of the planes but one were immediately staked out in the snow, and the war was on. One ship was taken to the machine shop shorn of its pants and decked out in skiis. This ship was henceforth very affectionately (?) known as the "Robert E. Lee" after the redoubtable paddle boat it so closely resembled.

At Mitchel Field the socialites immediately stepped into their own - to be sure some stepped just as hurriedly out - and New York may never recover from the shock. The reunion between some of the P-shooters and the 13th was heartrending, especially since they hadn't seen each other since leaving Barksdale Field, three full days before.

Here we had attached to us 20 men to act as crew chiefs, gunners, armorers and radio men. Twelve of these men, including Sergeant Nero, were from the 37th Attack Squadron and eight were from 8th Pursuit Group Headquarters. The morale of the men throughout the Test was of the highest possible caliber, and the attached men worked in perfect cooperation with our own personnel. The high morale may be easily inferred from the fact that on Sunday, February 9th, a holiday with a cold snow falling, the men accomplished eight 40-hour inspections. This work, done on their own time in freezing cold, did more than anything else to keep all the planes in the air. Sergeant Nero was made line chief and functioned as such throughout the Flight. The character of the men, their morale and efficiency and their desire to "put out" cheerfully, no matter what the job or the weather, was at all times gratifying.

New flying clothing was issued at Mitchel Field that was a great improvement over that issued last year. New mechanical contrivances of all sorts were issued, and on the 1st of February we were ready to begin. The flight stayed at Mitchel Field until the third. Some trouble was experienced with our machine guns, but that was soon ironed out. None of the heated Pitot tubes worked satisfactorily, and it was not possible to correct this immediately, although it was corrected in time. But we did have cases at first of ships landing at 220 miles per hour and at 0 miles per hour according to the air speed indicators. On the fourth we were unable to fly, due to severe icing conditions, and on the fifth we moved to Concord, N.H.

Through no fault of the personnel responsible, the living conditions at Concord were neither comfortable nor satisfactory. The personnel concerned did everything humanly possible to make our stay as pleasant as possible, but the handicap was too great. We all slept in an armory, Bombardment and Attack, much on the order of sleeping in a hangar. There were 63 beds in one room with space enough to hold a dance besides. Sleeping on canvas cots that proved anything but comfortable, and so many humans in there together - well, it is a wonder that there were not a few dozen murders before we were through. The food, however, was excellent, which was a great saving feature.

All of our missions, save one, were attacks on the Burlington area, supposedly defended by the 55th Pursuit Squadron. Of seven attacks staged on Burlington, the Attack was intercepted by the Pursuit on but one. One mission was an attack on the Albany area, flying over Florida on the way, which called forth hoots and catcalls from nine half-frozen pilots.

On Friday, February 14th, at 8:30 a.m., the war was declared over, and preparations were begun to evacuate. On the 15th, the evacuation was accomplished, and the Provisional Cold Weather Test Group was disbanded at Mitchel Field.

The weather was very good for the duration of the Test. The temperature was uniformly in the neighborhood of zero Fahrenheit, for starts in the mornings, and slightly colder during flight. The visibility was usually excellent, with distances up to 60 miles at times. One snow storm or blizzard hit Concord on a Sunday when we were not scheduled to fly, so no time was lost due to weather. One mission attempted by the Attack Squadron had to be called off after reaching the mountains on our way to Burlington, because of a thick snow storm, in which the flight leader had only momentary glimpses of the second and third element and finally lost the third element altogether.

The average flying time was around four hours a day. No discomfort was experienced by the pilots equipped with the new flying clothing except for the hands. The new gloves were very pretty but lacked warmth. The rest of the equipment was very satisfactory.

On February 8th, almost all of the officer personnel took advantage of an opportunity to go to Hanover to see the Dartmough College Winter Carnival. This magnificent spectacle was enjoyed by everyone who went to see one of the few scenes of its kind in the world. On February 12th, there was a winter carnival in Concord, featuring the antics of the fearless Bombardiers on skates. In the morning there was an engine starting contest, which was won by the crew chiefs et al of the 13th Attack Squadron. In the afternoon, after the flying activities of the morning, there were snow shoe races, ice skate races, ski races and, finally, a hockey game. The hockey game was won by 1st Lieut. A.F. Merewether who, with the aid of five others, by the name of Joe, represented the Attack Squadron. The final score was - Merewether, 4; Bombardment, 2.

The Chamber of Commerce of Concord held a very nice banquet on February 10th for all officers of the Flight. Numerous dances were held for the men, and the whole city made every effort to make our stay a pleasant one. The weather was never unbearably cold, and the whole test was a complete success. Most of the airplanes in the 13th had 900 or more hours' use behind them since overhaul. We had all airplanes running every day for at least one mission, and on most days we had all airplanes running for all missions.

The trip back was without incident. The planes did return in bunches, we must admit, but all airplanes did return, and without anything more serious than one ship losing a pair of pants in a snow drift. Not enough credit can be laid to the 61st Service Squadron, the members of which rendered such valuable assistance throughout the flight. The entire ground echelon worked with remarkable efficiency and was instrumental in making the flight the success it was.

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GENERAL WESTOVER VISITS AIR CORPS POSTS

Selfridge Field was honored by a visit from Major-General Oscar Westover, Chief of the Air Corps, on March 9th. The General arrived by air at 11:00 o'clock in the morning. He was the guest of Lieut.-Colonel Ralph Royce at luncheon, after which he proceeded to the Officers' Club, where all of the officers and cadets at Selfridge Field were assembled and were permitted to hear an excellent talk by the General on future Air Corps policies and other pertinent information. After the talk, an opportunity was afforded each officer and cadet to greet him personally. In company with Colonel Royce, General Westover then proceeded by motor car to make a brief inspection of post activities, departing from this station the same afternoon.

On February 6th, General Westover arrived at Barksdale Field, Shreveport, La., from the West Coast in the midst of weather which was holding all pilots to very restrained local flying. A few minutes after landing, General Westover met all officers at the Club, where he generously offered to answer questions, and closed by acquainting the assembled officers with his general policies as Chief of the Air Corps and certain of his desires concerning the activities of individuals. General Westover spent the night at Barksdale Field and left the next day with even poorer weather conditions than those prevalent upon his arrival.

General Westover stopped at Scott Field. Belleville, Ill., for 30 minutes on March 10th. The visit was on official business.

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MARCH, 1936, CLASS STARTS TRAINING

The class of March '36 began flying training at Randolph Field, Texas, on March 9th. The class is composed of 61 Flying Cadets and 7 student officers, the smallest class to report for training since the opening of Randolph Field. With a class of this size, officers who are not on duty with the Flying Department are practically sure of being able to get a PT to fly during the forenoon, if they can spare the time from their other duties.

NEW DATA ON RADIO FADING

By the Maxwell Field Correspondent

On October 10th, last, the Bureau of Standards sent a request through the War Department to all Army stations with radio facilities, expressing the desire that radio operators watch carefully for an expected complete fade-out of all radio signals for about fifteen minutes between October 21-25, 1935.

During this period, no especial fading was noticed. In fact, the phenomenon was not noticed at Maxwell Field until February 14, 1936. The data are of great interest scientifically and are briefly described, as follows:

A complete fade-out occurred at 9:20 a.m., C.S.T., between 3000 and 11,000 K.C. Heavy static was present at the time. The operators looked over all bands immediately. Above 11,000 K.C., a few signals, so weak as to be unreadable, were heard. At 9:26 a.m., KDKA was heard on 15,000 K.C. with a signal strength of two. In another minute, strengths of signals above 11,000 K.C. appeared to be improving. At that time a few other commercial stations were heard with signal strengths of two. A few minutes later, several amateur stations were heard around 14,000 K.C. at a signal strength of one. At this time KDKA signals had reached a strength of four.

At 9:38 a.m., WVR, Fort McPherson, Atlanta, Ga., was heard on 8,890 K.C. with a signal strength of one. At 9:44 a.m., WVR, operating on 8,170 K.C., was barely heard with a signal strength of one. At 9:45 a.m., WAR, the War Department station, Washington, D.C., was heard at 12,000 K.C., with its normal strength of four.

At 9:48 a.m., Barksdale Field and Fort Bragg, on 8,620 K.C., began to come in with a signal strength of one, increasing to normal at 9:55 a.m.

WVR, when operating on 4,020 K.C., was not heard until 10:05 a.m., with a signal strength of one. It increased to normal by 10:10 a.m.

The fading phenomenon occurred with such rapidity and completeness that it was thought that the antennas were down. No reliable observations could be made throughout the broadcast band on account of the heavy static which was occurring at the time.

The phenomenon disappeared gradually and the conditions began to approach normal at the higher frequencies first and gradually crept down to the lower frequencies.

For the layman it might be explained that a signal strength of one describes a signal which is recognized as such, but which is so weak that it is unintelligible. Signal strengths of two, three, four, etc., describe an increasingly stronger signal. Under ordinary conditions, a signal strength of four is easily readable.

The Bureau of Standards is interested in getting all available data on such phenomena, since it may be possible to predict the occurrence and duration of them, also to find those frequencies most affected. It is possible that the conditions do not affect the ultra high frequencies. If this is the case, the Army, which has ultra high frequencies available in combat, will have the advantage of one which does not.

A radio report was made to the Fourth Corps Area Signal Officer, who forwarded it to the War Department.

On February 21, 1936, Mr. D.H. Dellinger, Chief of the Radio Section, Bureau of Standards, wrote a letter direct to the Post Radio Station, Maxwell Field, expressing appreciation for the data.

Corporal B.F. Borders, 2nd Class AM, 86th Observation Squadron, Air Corps, is in charge of the Post Radio Station at Maxwell Field.

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AERIAL PHOTOGRAPHIC WORK AT SCOTT FIELD

The 21st Photo Section at Scott Field, Belleville, Ill., has just delivered to the Fort Riley Cavalry School copies of a large mosaic, covering 560 square miles of territory in the Fort Riley region. Many weeks were spent by the personnel of the Photo Section in assembling this large photographic mosaic. The mosaic was copied on a number of 20 inch by 24 inch negatives. The original negatives were made at a scale of 1:15,000, while the copy negatives were made at a scale of 1:20,000.

Progress of construction photographs are made periodically of all dams under construction in the Mississippi River in this region for historical purposes. These are being made for the U.S. Engineers.

Another project being carried on, whenever weather conditions permit, is an aerial photograph of 4,500 square miles of the Mississippi River for use in flood control work by the St. Louis district of the U.S. Engineers. In the past two months, high water in the river, overflowed lowlands, ice and snow, cloud layers and many other things tending to interfere with good aerial photographic work, prevented any great amount of progress on the project. To date, however, over 1,800 square miles have been photographed. These photos are used to make large maps of the river. The method employed in this case differs from the mosaic assembly method in that maps are made direct from the prints by projection. This is an easier, faster and simpler method.

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RECOGNITION AT RANDOLPH FIELD

By 2nd Lieut. Jack W. Hickman, C.E.

THURSDAY night, February 20th, officially marked the passage of one class of Flying Cadets to Kelly Field and the passage of another class from the "Dodo" Stage. With no little ceremony, the two classes lined up in the mess hall, faced each other, marched forward, and shook hands. No longer were the "Dodos" a class apart - no longer were they to say "Mr." and "Sir" to those fortunate enough to be one step ahead of them. Now they were full-fledged Flying Cadets, well on their way to wings and a commission.

This fact was pointed out to them by Colonel Henry W. Harms, Commandant of the Air Corps Primary Flying School, in a few timely and well chosen words which could not have failed to impress his listeners. Brigadier-General James E. Chaney, Commanding General of the Air Corps Training Center, looked on in silent approbation while Colonel Harms extolled the qualities of a soldier as he presented Flying Cadet Wonderful A. Trembly with the Catlett Trophy for "SOLDIERLY EFFICIENCY" and Flying Cadet Ralph W. Catlin with the Williams Trophy for "OUTSTANDING ATHLETIC ABILITY."

This presentation marked the end of the old and the beginning of the new, for following this simple but dignified ceremony, Colonel Harms, assisted by Captain John M. Weikert, Commandant of Flying Cadets, issued warrants of appointment to the following Flying Cadets of the new upper class:

CADET CAPTAINS

Michael J. Coffield
Troy Keith
Charles K. Nelson, Jr.

CADET LIEUTENANTS

John R. Kilgore
George R. Anderson
William J. Kennedy
John O. Bradshaw
Harry P. Leber, Jr.

CADET FIRST SERGEANTS

Royce G. Kunze
Churchill L. Scott, Jr.

CADET SUPPLY SERGEANTS

Cecil H. Childre
Jack F. Todd

CADET SERGEANTS

Billy W. Kent
Marion N. Pharr
Bruce H. Beesley
James C. Averill
Alexander P. Couch
Milton E. Thompson
Alban B. Ogden
Park R. Larned, Jr.
Charles J. Howe
Jack L. Schoch
William E. Parsel
Arthur W. Schmitt, Jr.
Raymond H. Gardner, Jr.

CADET CORPORALS

Robert Boyd
Robert C. Orth
Oliver D. Loomis
Ira Mumm
John M. Ferris
Ben I. Funk
Charles U. Hale
Frederick G. Huish
Harold W. Ohlke
George F. Ranney
Julius H. Werle
Herbert O. Wangeman
G. R. Montgomery
Arthur R. Anderson
Patrick W. McIntyre
James W. Anderson, Jr.

Flying Cadets Coffied was designated as Battalion Commander, Kilgore as Battalion Adjutant, Gardner as Color Sergeant, Boyd and Orth as Color Corporal.

The actual recognition followed this presentation, and the remainder of the evening was devoted to gaiety and dancing. Music was furnished by an excellent orchestra from San Antonio, refreshments were served, and the Flying Cadets and their young ladies danced until one a.m. But no wonder it was a gala celebration - not only did it mark recognition, but also a great step in the career of some one hundred young men, each of whom follows in the footsteps of such men as Lindbergh!

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LIGHTER-THAN-AIR ACTIVITIES AT SCOTT FIELD, ILL.

The 9th Airship Squadron began the preliminary work for the re-erection of the 200,660-cubic foot airship TC-11. The airship will be ready for flying again within a few weeks.

At present the 9th Airship Squadron is operating three airships, the TC-14, TC-10 and TE-3. The average monthly gassing factor for these three airships in 1935 was 4.5%. A few years ago this figure was a high as 25%. Constant experimental work carried on at Scott Field has helped to reduce that figure to its present low mark.

The TC-14 airship has made flights recently, using all three motors. The third motor was not intended to give added speed to the airship. Instead, it was designed to drive the airship forward alone at a speed of 20 to 35 miles an hour while the two 375 horsepower motors rest or while observations are being made.

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CROSS-BREEDING AN AIRPLANE

In a press bulletin of the Bureau of Aeronautics, Navy Department, it is stated that during a recent night extended flight over a lighted airway an unexpected incident happened at Maxwell Field upon arrival there. The visibility was poor and a layer of smoke on the field apparently made the lights dim and distances deceiving. Near the end of the landing run, one student from the Navy flying training station, Pensacola, Fla., saw another plane, already on the ground, suddenly loom up in front of him. His reaction was prompt and he sharply ground looped to avoid a collision. Unfortunately, the flare bracket on the

(Continued on Page 12).

LOOKING INTO THE FUTURE

It is difficult to measure the influence which genius exerts in moulding the developments of the future. Newton and the falling apple and Watt and the bubbling teakettle assume tremendous stature. A vital idea, once it is given birth, grows to fateful fruition. Such an idea was that of Lord Tennyson, which he committed to rhyme in "Locksley Hall" twenty years before the first airplane flew and thirty years before airplanes battled in the air.

Tennyson wrote:

"For I dipt into the future, far as human eye could see,
Saw the Vision of the World, and all the wonders that would be;
Saw the heavens fill with commerce, argosies of magic sails,
Pilots of the purple twilight, dropping down with costly bales;
Heard the heavens fill with shouting, and there rain'd a ghastly dew
From the nations' airy navies grappling in the central blue."

In these lines are predicted air commerce, air warfare and chemical air attack. The visions of today will mould the developments of tomorrow.

If you have a "vision" of the future possibilities of aviation, send your idea to the Air Corps News Letter.

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BROTHERS-IN-ARMS AT AIR CORPS POSTS

There appears to be some sort of rivalry, unconsciously, perhaps, among Air Corps posts as to which one could achieve the distinction of having the highest number of brothers among their enlisted personnel.

A recent contribution from Scott Field, Belleville, Ill., invites attention to the fact that there are eleven sets of brothers stationed at that post, which include 23 soldiers, there being one set of three brothers. This record is not very far behind the one held by Chanute Field, to which attention was called in the issue of the News Letter of October 15, 1935. Chanute Field prided itself on having 17 sets of brothers, among which were two sets of three brothers each. Just a short time before this, Hamilton laid claim to the unique distinction of having three brothers in the same squadron on the same post, only to learn that the two sets of three brothers each at Chanute Field were also members of one squadron.

In the News Letter of September 15, 1935, it was stated that the Station Complement at Brooks Field, Texas, had four sets of brothers, one a pair of twins who even had their parents guessing as to which was which. Back in 1929, Luke Field, T.H., claimed the record with eight sets of brothers, three of them serving with the 65th Service Squadron.

Coming back to Scott Field, it is noted that the eleven sets of brothers are distributed among the organizations at that field, as follows:

Privates Gale and Verlin E. Baldridge; Oliver J. and Herschel O. Hackwith, Rollen J. and Robert A. Hall, with the Station Complement.

Privates Don M. and Harold M. Morgan, Charles and Frank Yonke, with the 9th Airship Squadron.

Privates Lawrence F. and Harold A. Brinkman with the 6th Signal Corps Detachment.

Privates Thomas N. and Ola E. Ferguson, 15th Observation Squadron, and Fred F. Ferguson, Station Complement.

Privates Charles Canady, Station Complement, and Roger Canady, 9th Airship Squadron.

Privates Leslie D. Rivers, 15th Observation Squadron, and Harold Rivers, Station Complement.

Privates Henry L. Porter, Quartermaster Detachment, and Harvey L. Porter, 9th Airship Squadron.

Privates John L. Williams, Station Complement, and Albert R. Williams, 6th Signal Service Detachment.

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Cross-Breeding an Airplane

(Continued from Page 11)

right wing ploughed the ground, and the resulting stress broke the main spar out near the end bow. The next day the plane was repaired, using an Army wing courteously furnished at Maxwell Field. The plane had a strange appearance on its homeward flight, with a silver fuselage and upper wing and a standard Army yellow lower wing.

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AND WAS HIS FACE RED?

A Navy Department press release records a humorous incident indicative of minor accidents in connection with training at the Naval Air Station at Pensacola, Fla. An NY-1 training plane, piloted by an Aviation Cadet, nosed up at Z field after landing in a soft area. In the interests of the Trouble Board and photographic training, a photographer was dispatched to the scene in an O2U with an instructor as pilot. A precision landing close aboard the damaged plane in the same soft spot likewise ended in a nosed up Corsair. After hurriedly clambering from the plane, the photographer remarked to the pilot that this was his first opportunity "to kill two birds with one stone." The pilot sheepishly stood aside for the "shooting."

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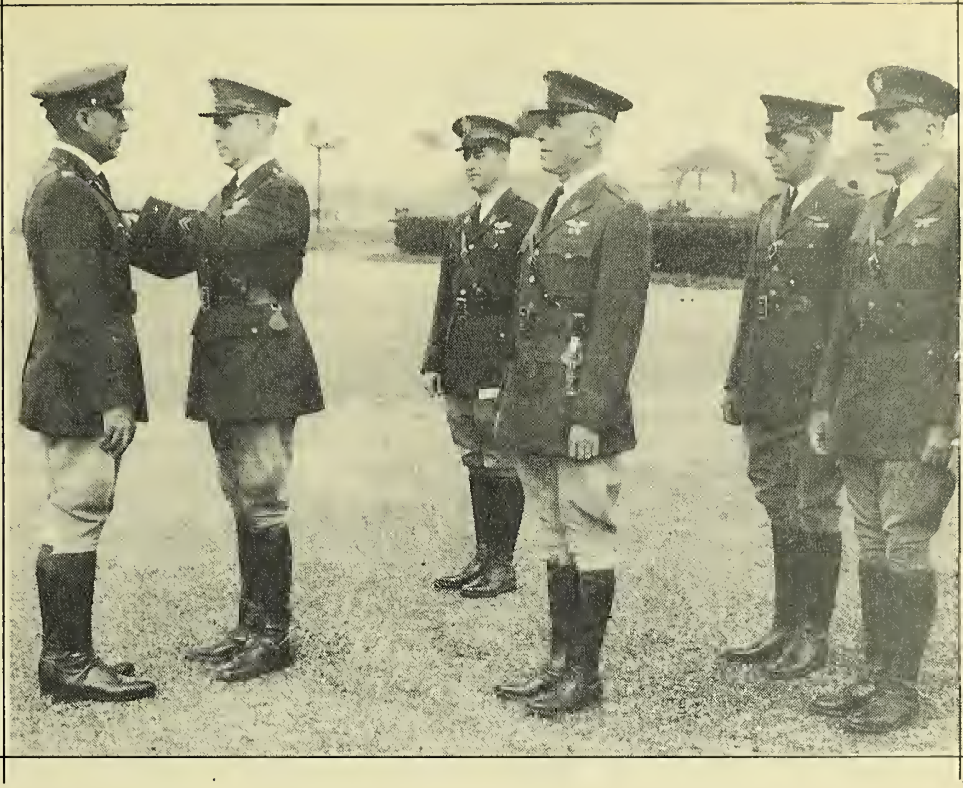
Our sincere thanks are extended to the Air Corps Training Center for the cover page and inserts featuring this issue.



BRIGADIER GENERAL CHANEY PRESENTS OAKLEAF CLUSTER TO CAPTAIN ANDERSON

By direction of the President, under the provisions of the Act of Congress, approved July 2, 1926, a bronze oakleaf cluster for the Distinguished Flying Cross was on February 6, 1936, awarded to Captain Orvil A. Anderson, Air Corps, Kelly Field, Texas, for extraordinary achievement while participating in an aerial flight as pilot and assistant scientific observer of the National Geographic Society-Army Air Corps Stratosphere Balloon Flight, November 11, 1935. The presentation was made in the presence of the assembled command of Kelly Field on March 7, 1936. The above photo shows General Chaney making the presentation, the other officers from left to right being: Captain Bevans, Colonel Fickel, Major Nutt, and Major Knapp. The citation quoted below was read to the entire command:

> "Orvil A. Anderson, Captain, Air Corps, United States Army. For extraordinary achievement as pilot and assistant scientific observer of the National Geographic Society-Army Air Corps Stratosphere Balloon Flight which started from the vicinity of Rapid City, South Dakota, on November 11, 1935, and successfully landed near White Lake, South Dakota, with the scientific equipment and the valauble records it contained intact. In performing this flight Captain Anderson distinguished himself by extraordinary achievement, coolness, and confidence, in piloting the largest and most heavily equipped balloon ever flown to a greater height than had previosuly been attained by man."

THE FLYING CADETS' CLUB AT SAN ANTONIO

By Flying Cadet Howard L. Fuller

THE Flying Cadets at the Air Corps Training Center have recently effected a reorganization of their social activity in San Antonio. For years the Cadets patronized the Aero Club, promoted by a civilian and operated in conjunction with several other enterprises. This situation had, for several classes, created a great deal of dissatisfaction. Minor efforts of various committees to improve conditions had accomplished but little. Upon investigation, the committee of the July, 1935, Class, decided that the only way to effect a satisfactory reform was to break away entirely from the old order.

Despite some skepticism and adverse criticism, the Flying Cadets themselves accomplished the disintegration of the old management and the inauguration of the new. The entire movement would not, however, have been possible without the splendid example and cooperation of Captain John M. Weikert, A.C., Commandant of Flying Cadets. The organization of the new Flying Cadet Club in San Antonio is indicative of the constructive and ceaseless activity of this officer in his endeavor towards bettering conditions with the Cadet Detachment. It is largely through his efforts that the Cadets now find themselves enjoying club rooms and privileges which are far superior to those of the recent past.

The new affiliation is with the San Antonio Casino Club, 102 West Crockett Street, San Antonio, Texas. The club rooms are to be found on the fifth floor and include private card rooms, pool tables, a radio, a library, a table of current magazines, and ample room for relaxation amid cheerful and luxurious surroundings. The sixth floor of the building contains a ball room with an excellent floor and a kitchen-dining room annex. This can be made available for tea-dancing on Saturday afternoons from three to six with no special assessment to the members.

A further outstanding advantage which accrues to the Flying Cadets by virtue of this agreement with the Casino Club is a guest-privilege at many other fine clubs which are affiliated with the local organization. Included in the imposing list of affiliated clubs are the Los Angeles Athletic Club, the Houston Club, the Pacific Coast Club and the Newark Athletic Club. By merely obtaining a letter of introduction from the Secretary of the local club, a Flying Cadet going to a new station or on a navigation flight may enjoy the privileges of the best clubs in the largest cities in the United States, as well as two in Mexico and one in Canada. This affords an opportunity for the enhancement of social prestige and fellowship wherever a member goes. The true significance and importance of this feature will become apparent as future classes leave the Air Corps Training Center.

The club membership dues are $1.50 a month, payable in advance. There are no initiation fees. Of the $1.50, the Casino Club receives $1.00, and the 50¢ accrues to a fund at the disposal of the Flying Cadet Committee which, under the supervision of the Commandant of Flying Cadets, is in charge of the club's business. In addition, this Committee has made arrangements with leading hotels in San Antonio for rates on rooms for Flying Cadets who desire to stay overnight. It is expected that dinner-dancing privileges may also be obtained at a special low rate. Organization and a common policy will now enable the members of the Flying Cadet Detachment to enjoy many privileges which were not possible in the past.

The Flying Cadets are very proud of their new club and cordially invite all Air Corps officers and ex-Flying Cadets to visit it at every opportunity. They are heartily welcome, and every effort will be made to further their comfort and enjoyment while visiting at the Training Center or in San Antonio.

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GUARDSMEN TRAIN FOR SUMMER CAMP

In preparation for their annual encampment at Fort Lewis, Wash., June 12th to 26th, next, pilots of the 41st Division Aviation, Washington National Guard, have entered upon an intensive training schedule in aerial gunnery and photography. The aerial gun cameras head the weekly training flight schedules in preparation for a record in firing during the camp.

Each pilot and observer will also photograph a strip, using complete camera equipment, before the camp period. Arrangements for gunnery at Fort Lewis will be made for the 41st Division Aviation by Captain Davis, Commander of the Fort Lewis Air Corps Detachment.

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The current "flu" epidemic has hit Barksdale Field, La., rather hard. In one month an entire six months' supply of medications was used up by the post hospital, and emergency requisitions were prepared for more. In the meantime, each new patient is given lots of sympathy and good advice.

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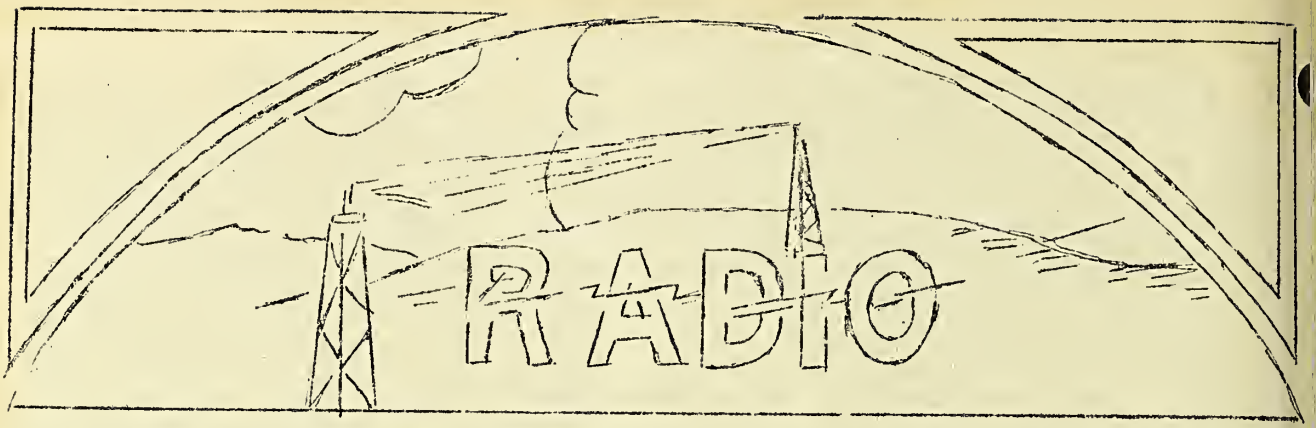
During February, the Engineering Department of the San Antonio Air Depot overhauled a total of 21 airplanes and 71 engines and repaired 25 planes and 13 engines



Bureau of Air Commerce radio officials are rendering a service which is greatly appreciated by the flying personnel of the 41st Division Aviation, Felts Field, Spokane, Wash.

Seldom, if ever, are cross-country flights made any more from their home station without first making arrangements for communication contact throughout the flight, including Pxs to the home station on landings at foreign airports.

Much to the pleasure and comfort to the Division Aviation personnel, the airways radio officials seem anxious to provide the service, as evidenced by their requests that pilots in flight report their positions as often as 10-minute intervals, which is also proving to be splendid training in the operation of new radio equipment issued recently.

On flights between Spokane and Seattle, a distance of about 270 miles, pleasing results have been obtained several times. On leaving their station, pilots request of the airways radio officials that communication contact be maintained throughout the mission.

Ordinarily, four stations are worked during the flight, and these include Ephrata, Ellensburg and Seattle. The Seattle-Ellensburg beam crosses the Cascade Mountains, which are cleared safely at about 7,800 feet when instrument flying - all except Mt. Rainier, which towers about 14,000 feet and lies south of the on-course signal.

The longest continuous "under-the-hood" flight on record with the 41st Division Aviation was made recently by Captain Claude Owen, Operations Officer, when he flew from Spokane to Boeing Field, Seattle. On this flight the power of the new Air Corps radio equipment proved itself. On the return flight, when within about 55 miles of Spokane, the airways operator advised that the Seattle operator would like a call. Changing frequency, the Seattle operator contacted Captain Owen almost instantly, and in a clear tone a conversation was carried on.

Captain Owen witnessed no particular difficulty on the instrument flight to Seattle other than to have the regular weather broadcast "blot out" the beam as he neared Boeing Field. He completed one 360 degree circle, coming back on the course. At 5,000 feet, directly over Boeing Field, there was no difficulty in determining the cone of silence.

Navigation flights between Spokane and Fort Lewis are to become almost daily occurrences with the arrival of good weather for the pilots. It is common for the pilots to fly to the coast in the afternoon, have dinner, and return at night on the beam.

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SCOTT FIELD RADIOMAN AIDS IN FLOOD WORK

On March 20th, when Williamsport, Pa., was flooded by the swollen Susquehanna River and was deprived of the electric power necessary to operate its telephone and telegraph lines and its radio broadcast station WRAK, there was but one means left by which communication with the outside world could be accomplished. That sole means, amateur short wave radio station W8LMY, became active by means of electric current from a series of batteries and sent forth important messages concerning the exact state of the flood as well as messages to the relatives and friends of various Williamsport people.

But William C. Szendry, of 653 Maple Street, Williamsport, Pa., the operator of W8LMY, was unable to send messages direct to the particular city he was anxious to contact - New York City, only 150 miles away - because of the peculiar "skip distance" of short wave radio. Szendry, however, knowing the reason for this peculiarity and knowing also that his station could establish communication with any other amateurs located at least 700 miles away in any direction, sat at his set and spoke into his microphone. He gave his station letters and his location and then asked that whoever heard him should contact his station at once. His only fear was that there was no amateur listening at that time. Almost at once

Szendry heard someone calling his station in answer to his appeal for aid. Private Frank W. Brashears, 9th Airship Squadron, Scott Field, Ill., had been listening in at his station, W9CJH, for just such an appeal. Brashear's station, being located about 700 miles from Szendry, was in the live belt of the 20 meter wave band.

Szendry explained to Brashears that he had some important messages to be relayed to New York City, and he asked Brashears to contact some amateur in that city if he could. Brashears agreed to do this. Within a few minutes Brashears received a response to his call from Jerry Farrell, of Compton Plains, New Jersey, only 18 miles from New York City. Farrell agreed to act as the third party of the relay team and to phone any and all messages to New York City. Also, Farrell agreed to stand by to receive messages from New York City destined for Williamsport.

It was about 10:30 a.m. when Szendry first called for aid, and it was just 11:15 a.m. when the first two messages had been relayed the 1500 miles or so from Williamsport to Scott Field and then to Compton Plains and New York City. Three radio stations and a telephone line were required to get messages the 150 miles to New York City! But it was worth it, for many important messages were relayed to the world concerning the true condition of Williamsport, and many other messages were relayed which relieved the minds of anxious people.

By three o'clock, the flood water had receded about 15 feet from its crest, enough to permit the resumption of the regular telegraph line at Williamsport.

But the work that those three radio amateurs did during those four hours cannot be estimated in mere dollars and cents, and nothing but gratitude can repay Szendry, Brashears and Farrell for the work they did in time of an emergency.

Brashears' station is said to be one of the most powerful in the United States on the 20-meter band, for it contacts Panama on a regular schedule and often brings in New Zealand and Australia - a rare thing.

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PROMOTION OF AIR CORPS OFFICERS

Brigadier-Generals Augustine W. Robins and Henry H. Arnold, Air Corps, the former on duty as Chief of the Materiel Division, Wright Field, and the latter on duty in the Office of the Chief of the Air Corps in Washington, D.C., whose regular rank on the lineal list was that of Lieut.-Colonel, were promoted to the rank of Colonel, effective March 1, 1936.

AIR OPERATIONS IN EAST AFRICAN CONFLICT

The following extract from an article dealing with the employment of modern arms in the Battle of Canale Doria, and which appeared in a recent issue of the Italian semi-official paper "Le Forze Armate," is quoted:

"Aviation carried out strategical reconnaissance at long distances and signalled continually by radio to General Headquarters the size and location of enemy groups, thus checking and integrating information gathered by the Intelligence Service from other sources; it also prepared the attack, disorganizing the enemy with very efficient bombardment of sensitive points; participated in the attack with pursuit planes, machine guns and bombs against ground troops; it signalled the directions taken by the enemy when withdrawing and harrassed the retreat by means of repeated bombardment; finally it insured communication and liaison between the different advancing columns. In spite of the difficulties of the terrain, aviation efficiently cooperated toward victory, fully demonstrating its possibilities. It confirmed the fact that it is a very valid support for ground forces which, however, must carry out the actual battle, over every kind of terrain, from the beginning to the end."

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THE SAN FRANCISCO BAY EXPOSITION

Cities around San Francisco Bay will celebrate during the year 1939 an international exposition to mark the completion of the world's two largest bridges across the San Francisco Bay. This will be the first international celebration to be held in San Francisco Bay Region since 1915, when the Panama Pacific International Exposition marked the completion of the Panama Canal. Sponsoring the Exposition will be the San Francisco Metropolitan area cities, including San Francisco, Oakland, Alameda, Berkeley, Albany, San Leandro, Hayward, Sausalito, San Rafael, Richmond, San Jose, Palo Alto, Redwood City, San Mateo, Burlingame and others.

The exposition will open February 18, 1939, and continue for 288 days to December 2, 1939.

The site of the exposition lies in the center of San Francisco Bay, midway between San Francisco and Oakland, on shoal land located just north of an adjoining Yerba Buena Island. It is in the geographical center of a population area of 1,785,000.

During the year 1936, an area of 385 acres of this shoal land will be filled in to provide the site of the Exposition, and later the land will be used for a modern municipal airport and seaplane base, owned and operated by the City and County of San Francisco.

DEATH OF CAPTAIN SAMUEL P. MILLS, AIR CORPS

The death of Captain Samuel P. Mills, Air Corps, as the result of an airplane accident at Fort Slocum, New York, on Sunday afternoon, March 22nd, was a great shock to all who knew this genial and likeable officer, whose pleasing personality, fine character, good nature, big-heartedness and propensity for going out of his way to perform acts of kindness for his fellow men, made for him fast friends wherever he went. His untimely death cast a pall of gloom and sorrow throughout the Air Corps, and particularly in the Office of the Chief of the Air Corps where he had been on duty for the past three years. It is natural that we should feel more keenly the loss of a friend with whom we had been closely associated for a period of years.

Captain Mills, who was on duty in the Information Division, left Bolling Field, D.C., on Friday, March 20th, to fly Representative Tobey, of New Hampshire, to Boston, on orders of the Chief of the Air Corps. The trip was occasioned by the flood emergency in the New England area.

According to press reports, Captain Mills, on his return trip from Boston on Sunday, encountered high winds when reaching the vicinity of New Rochelle, New York. It was stated that the plane, its motor faltering, shuttled back and forth above New Rochelle for half an hour as though the pilot were attempting to overcome motor trouble and land. A 60-mile gale swept the metropolitan area. Swooping down toward the Fort Slocum parade ground, the airplane struck a corner of the recreation center building on that post with one wing, then overturned and plunged to the ground in a mass of tangled wreckage.

Captain Mills was a pilot of exceptional ability, and aviation was his life work as well as his hobby. During his career in the Air Corps he, like all other pilots, had his share of "close shaves," but he invariably stuck to his ship and surmounted the difficulty. Press reports state that, although he carried his parachute, it was not strapped to him. He probably unfastened it to work with the motor. Indications are that he deliberately decided upon an emergency landing upon the Fort Slocum parade ground.

In the field of aviation, Captain Mills was, in truth, an old-timer. Even before going to college, and as early as 1910, he had practical experience with airplanes. In 1911, he entered the University of Vermont, and during his summer vacation periods, and until he graduated in 1915, with a B.S. degree in Mechanical Engineering, he affiliated himself with the exhibition fliers of those early aviation days, C.C. Bonnette, C.F. Niles, Eugene Ely and George A. Gray. His work with these daring pioneers in those days was that of aviation mechanic, but he also received a limited amount of flying instruction.

Captain Mills was born in South Ryegate, Vermont, July 9, 1893. After attending the grammar school in that city for seven years, and the St. Johnsbury Academy for two years, his keen enthusiasm for aviation prompted him to take up a mechanical engineering course. Following his graduation from the University of Vermont, he took a position as Assistant Principal of the graded and high school of Newport, Vermont, which he held from September, 1915, to March, 1917. He was then Principal of these two schools to July, 1917, when he accepted a position as Assistant Instructor at the Massachusetts Institute of Technology, Cambridge, Mass.

On September 29, 1917, he enlisted in the Aviation Section, Signal Corps, as a Private, 1st Class. The war emergency led to the establishment of a School of Military Aeronautics at the Massachusetts Institute of Technology, among other prominent universities of this country, and Captain Mills remained at this school in the capacity of Instructor in aviation engines. He was promoted to the grade of Sergeant, August 10, 1918, and the exceptional performance of his duties as Instructor led to his appointment, on November 2, 1918, as a second lieutenant in the Air Service.

The School of Military Aeronautics at the Massachusetts Institute of Technology having been discontinued on October 1, 1918, Captain Mills was transferred to the School of Military Aeronautics at Princeton University. Upon being commissioned, he was assigned to duty at Taylor Field, Montgomery, Ala., in the Engineering Department. Later, upon the completion of his flying training, he received the rating of Reserve Military Aviator and was assigned as Officer in Charge of Flying at Taylor Field. In May, 1920, he was transferred to Ellington Field, Houston, Texas, where he was assigned as Chief Engineer and Operations Officer.

Always eager to advance his professional knowledge, Captain Mills sought permission to take a post graduate course in Aeronautical Engineering at the Massachusetts Institute of Technology. This was granted, and he completed this one-year's course in June, 1921.

Still imbued with a desire for more knowledge, Captain Mills' next station was at McCook Field, Dayton, Ohio, where he pursued the one-year course at the Air Service Engineering School, graduating on August 15, 1922. While pursuing his studies, he also acted as Secretary of the Engineering School and as Project Engineer for Thomas-Morse airplanes. He continued to serve as Secretary of the Engineering

IN MEMORIAM

1893 CAPTAIN SAMUEL P. MILLS, AIR CORPS 1936

B.S. University of Vermont 1915
Aero.Engineering - N.Y. U. 1932

An ardent flying enthusiast eagerly embracing every opportunity to advance the cause of aviation. A splendid flyer and a convincing speaker on the subject nearest to his heart. We regret the circumstances which occasioned this acknowledgement of the lasting debt of gratitude which aviation owes to him.

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School until June 30, 1924, when he was transferred to duty in the Philippines, with station at Camp Nichols, where he served as Adjutant in addition to performing other duties. On June 5, 1926, he was transferred to Kindley Field, Fort Mills, P.I., and assigned to duty as Armament, Parachute and Assistant Engineer Officer of the 2nd Observation Squadron.

While in the Philippines, Captain Mills was a frequent contributor to the Air Corps News Letter, and these contributions, descriptive of conditions and service in the Islands, were extremely interesting.

His tour of duty in the Philippines extended one year, at his own request, Captain Mills returned to the United States in June, 1927, and he was once more assigned to McCook Field, this time for duty in the Power Plant Branch Laboratory of the Materiel Division. This Air Corps activity was transferred to the new Wright Field the following month. In February, 1929, he was assigned as Chief of the Technical Data Branch of the Materiel Division, and he functioned in this capacity until November 6, 1930. While in charge of the Technical Data Branch, Captain Mills wrote many articles on aviation in addition to delivering lectures at frequent intervals in Dayton and nearby cities. As a matter of fact, throughout his career as an Air Corps officer, Captain Mills' outstanding ability as a lecturer and writer on aviation subjects led to many calls for his services from engineering societies and other organizations.

Anxious to preach the gospel of aviation to college students, Captain Mills' next assignment was at the New York University as Director of the R.O.T.C. unit thereat, and he endeared himself to the students through his willingness at all times to give them the benefit of his knowledge and experience. One unique feat he performed during his two-year stay at New York University was to land an observation plane in Van Courtlandt Park, two miles from the New York University campus, after a flight from Bolling Field. The Air Corps Unit of the University carefully disassembled the airplane at its resting place near the goal posts of Van Courtlandt Park and then carefully towed the fuselage to the New York University camps. After considerable effort, the disassembled airplane was moved into the laboratory building of the University, and then the enthusiastic students received much valuable instruction in rigging, assembling and disassembling a modern military airplane. Sometime later, on the coldest March 15th on record, the aviation class mobilized again at Van Courtlandt Park, assembled, rigged and inspected the Douglas plane, following which Captain Mills took off without incident, flew to Mitchel Field for gasoline and oil, and then proceeded to the Middletown Air Depot. The engine, due to valve adjustment and other work, functioned very smoothly and showed 30 additional r.p.m's. Its flying qualities and balance were most satisfactory.

Also studying while working with the students, Captain Mills received the degree of Aeronautical Engineer from New York University and much praise from its officials for the outstanding services he performed there.

Detailed in the fall of 1932 as a student at the Air Corps Tactical School at Maxwell Field, Ala., Captain Mills graduated therefrom in June, 1933, and was then assigned to duty in the Inspection Division, Office of the Chief of the Air Corps, Washington. In July, 1935, he was transferred to the Information Division.

Those responsible for the publication of the Air Corps News Letter will sadly miss "Sammy," as he was affectionately called, for he was always one of its staunchest advocates, and his assistance and advice, coupled with his frequent contributions to its columns, will be greatly missed.

Our heartfelt sympathy goes out to Mrs. Mills and her two children, Samuel P., Jr., 10; and Jean, 7 years of age. The loss of a loving husband and father, we know, is something that is extremely difficult to bear, and nothing that we can say here can adequately console them in their grief.

The remains of the deceased officer were laid at rest in Arlington National Cemetery on the morning of March 25th, services being held at the Fort Myers, Va., Chapel. The honorary pallbearers were Captains David S. Seaton, Lowell H. Smith, Alfred W. Marriner, Edward V. Harbeck, Jr., James C. Cluck and Mervin E. Gross, Air Corps. All the officers of the Office, Chief of the Air Corps, and many others from as far as Langley Field attended the funeral.

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CAPTAIN HEISEN DIES AFTER LONG ILLNESS

Captain Horace N. Heisen, Air Corps, a veteran of the World War, an expert pilot and a most capable all-around officer, died on March 23rd at the Letterman General Hospital, San Francisco, Calif., after a long illness.

Born February 9, 1893, at Oakland, Calif. Captain Heisen attended the grade schools and high school in that city, the University of California, Berkeley, Calif., for two years, and the Hastings College of Law for three years, receiving the degree of Bachelor of Laws. While at college he was an outstanding athlete and excelled in all the major sports, being particularly noted as a baseball pitcher. For two years he practiced law, and during the war he enlisted in the Aviation Section, Signal Corps, June 12, 1917, and was assigned for his ground school instruction at the School of Military Aeronautics, University of California. He received his flying training at Rockwell Field, San Diego, Calif., and was rated Reserve Military Aviator, October 19, 1917. He accepted a commission as 1st Lieutenant, Aviation Section, Signal Corps, January 1, 1918, at which time he was on temporary duty at Garden City, Long Island, N.Y., preparatory to sailing for duty overseas. He sailed for England with the 50th Aero Squadron, and after a very brief stay in that country proceeded to France where, on February 22, 1918, he was assigned to the Third Aviation Instruction Center. On March 21, 1918, he was assigned to duty with Flight B, 99th Aero Squadron, and he served with this organization on the front lines until August 12, 1918.

After serving for several weeks with the 161st Aero Squadron, Captain Heisen was assigned, on September 13, 1918, as commanding officer of the 278th Aero Squadron, and he served with this organization to July 22, 1919.

On June 26, 1918, while on a reconnaissance flight, 7 miles over the enemy lines, he was shot down by anti-aircraft artillery fire, but due to his skillful piloting he successfully landed his plane one half kilometer behind the Allied lines.

Efficient performance of his duties earned for him a promotion to Captain on October 3, 1918.

Upon his return to the United States, Captain Heisen reported for duty in the Office of the Chief of Air Service, and he was assigned to the Liquidation Division. He was honorably discharged from the service, at his own request, November 10, 1919. On March 15, 1920, he was appointed a Major in the Aviation Section, Signal Reserve Corps.

Appointed a Captain in the Air Service, Regular Army, September 16, 1920, he was assigned to duty in the Administrative Group, Office of the Chief of Air Service, served there for several weeks, then from October 4 to November 5, 1920, as Commanding Officer of the 99th Squadron, Bolling Field, D.C., and returned to the Office of the Chief of Air Service for duty in the Training and Operations Group.

On September 1, 1921, Captain Heisen was transferred to Langley Field, Va., for duty as student at the Air Corps Tactical School. Following his graduation in June, 1922, he remained at Langley Field in the capacity of instructor, performing also the duty of Commanding Officer of the Tactical School detachment for about 3½ years, and that of Assistant and Wing Operations Officer for 14 months.

After being on duty for two years, from March 20, 1926, to March 14, 1928, as Commanding Officer of the Boston Airport, Captain Heisen was transferred to Fort Crockett, Texas, where from March 18, 1928, to September 10, 1929, he commanded the 90th Attack Squadron, 3rd Attack Group. During the next two years he served a tour of duty in the Hawaiian Department, being Operations and Athletic Officer of the 72nd Bombardment Squadron for 9 months, Commanding Officer of the 72nd for ten months, and Executive Officer of the 18th Pursuit Group for four months.

Rockwell Field, San Diego, Calif., being his next station assignment, and where he served from June 21, 1932, to October 21, 1933, Captain Heisen commanded the 32nd Bombardment Squadron for 10 months, and later performed successively the duties of Post Adjutant, Post Executive and Intelligence Officer, Commander and Executive officer, Station Complemen While on duty as Executive Officer, Captain Heisen held the temporary rank of Major and, while Station Complement Commander, the temporary rank of Lieut.-Colonel.

Captain Heisen was transferred to Moffett Field, Sunnyvale, Calif., on October 25, 1935, and was on duty there as Station Complement Commander for thre months, when his physical condition became so grave as to necessitate his being sent to the Letterman General Hospital.

Captain Heisen is survived by his widow and two daughters, one ten and the other 9 years of age.

The heartfelt sympathy of the Air Corp is extended to the bereaved family.

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FAST GOING FOR A B-6 AIRPLANE

Major Harvey H. Holland, Air Corps, st tioned at Langley Field, Va., piloting a B-6 Bombardment plane, and accompanied b one Flying Cadet and three noncommission officers, recently made a training fligh to Kelly Field, Texas. He accomplished the return flight to Langley Field in an elapsed time of 18½ hours, which is somewhat of a record considering the type of airplane he was flying and the fact that he made stops at Barksdale Field, La.; Maxwell Field, Ala.; Atlanta, Ga., and Fort Bragg, N.C. The journey from Atlan to Langley Field was made at night, and the pilot had the benefit of a lighted airway only from that city to Spartanbur S.C., or about one-fifth of the distance.

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Captain George W. Goddard, Air Corps, Instructor in Aerial Photography at the Air Corps Technical School, Chanute Fiel Ill., is under orders for duty at Wright Field upon the termination of the present course at the Photographic School.

THE FLOOD IN THE NEW ENGLAND AREA

By the Boston Airport Correspondent

The recent flood catastrophe, which has stricken the New England States and made thousands homeless, was instrumental in our officers being sent on reconnaissance missions over the inundated areas throughout Massachusetts, the Connecticut Valley, Northern and Southern New Hampshire.

Captain Richards and Private Marsh commented on a flight over this area in the following manner:

A 275-mile flight was made on the morning of March 20th, during the height of flood conditions. Leaving the Boston Airport, they flew over Maynard and Concord, Mass., and thence to Clinton, where the turbulent flow of water of the Wachusetts Dam in the Nashua River caused Fitchburg's area to be badly submerged. All factories were forced to close.

Winchendon was next observed, where a large ice jam was seen. At Keene, N.H., a five-mile area covering the south and west portions of the city was under water. Brattleboro, Vermont, was next observed. Here the Connecticut River started its mighty surge downward through the Connecticut Valley, overflowing the banks, covering fertile farmlands with ice, silt and mud. Many bridges, railroads and highways were completely awash. Scores of bridges were demolished by the impact of waters racing down the river at unnatural heights. Several sections were cut off and completely isolated.

At Turners Falls, an additional flow of water was headed from the East into the river at Northampton, where the map showed sharp turns in the river that could not be observed from the air, being completely obscured by a lake-like sheet of water. Holyoke at the time was in danger of isolation. A 35-mile flow of water from Chicopee Falls, joining the Connecticut River at Springfield, which flows through the middle of the city, submerged the business sections from a depth of four to five feet. The river from Springfield to Hartford was from one to six miles wide.

Hartford was severely hit, water being within a few blocks of the tall business buildings. Brainard Field was covered with water to such a depth that the yellow and black squares on the roofs of the hangars were the only objects visible. The aerial perspective of Hartford was changed to such a marked degree as to be almost unrecognizable. On the west side of the river, south of Hartford, only two objects were visible, a power house and the hangar roofs at Brainard Field. The return flight from Hartford to Boston was over a comparatively dry territory, being untouched to any degree by the rampages of the flood.

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GERMAN NAVAL CADETS AT WHEELER FIELD

About 150 German Naval Cadets and 20 officers visited Wheeler Field on February 11th to witness an aerial review conducted in their honor. Nattily dressed in formal white uniforms, the German visitors, all members of a training cruise aboard the Cruiser EMDEN, transformed the usual business-like atmosphere of the field into something closely resembling Annapolis on Commencement Day.

Swarming over lawns kept velvet-green by the somewhat reluctant efforts of afternoon fatigue squads and an ingenious sprinkling device mounted on wheels, the cadets first proceeded to inspect the planes and hangar of the 19th Pursuit Squadron. Hardly had the inspection begun when a sudden thunder in the heavens brought the cadets running from the hangar to witness a fairly lively exhibition of formation flying conducted by the 6th Pursuit Squadron. Long and loud was the applause when the planes suddenly shifted into a perfect "E" for EMDEN, as they brought the review to a close. An inspection of the planes and hangar of the 26th Attack Squadron closed the brief program for the visitors.

During the several days that the EMDEN remained at Honolulu, many Wheeler Field men were guests aboard, some of the German-speaking ones among them acting as guides and interpreters for the Cadets in their trips and visits on the Island.

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CHANGES OF STATION OF AIR CORPS OFFICERS

Upon the completion of his present course of instruction at the Army War College, Lieut.-Colonel Walter G. Kilner will proceed to the Hawaiian Department for duty.

Major George E. Stratemeyer, Instructor at the Command and General Staff School, Fort Leavenworth, Texas, goes to Hamilton Field, Calif., for duty with the GHQ Air Force, upon completion of the present course of instruction, as does Captain Clarence P. Talbot, student at this school. Another student, Captain Charles M. Cummings, goes to the Materiel Division, Wright Field, Ohio, for duty with the Aircraft Radio Laboratory.

First Lieut. William T. Hefley is slated for duty at the Materiel Division upon the completion of his course of instruction at the Air Corps Technical School.

Captain Charles McK. Robinson, upon the completion of the course at the Command and General Staff School, goes to Infantry School, Fort Benning, Ga., as instructor.

BILL TO ORGANIZE AIR RESERVE TRAINING CORPS

The Hon. John J. McSwain, Chairman of the Military Affairs Committee, House of Representatives, introduced on March 23rd a Bill, H.R. 11969, authorizing and directing the Secretary of War to organize the Air Reserve Training Corps, and to establish such rules and regulations as he shall deem fit and proper for carrying out the purposes and objects of this Act. The remaining sections of the bill are as follows:

Sec. 2. That all male citizens of the United States between the ages of seventeen years and twenty-four years, of sound physical condition, good character, and with a minimum education equivalent to at least a full high-school course, shall, after agreeing to serve in the Air Corps of the Army of the United States in the event of national emergency, be eligible to be listed as candidates of said Air Reserve Training Corps, and shall be entitled to receive such emblem or other designation to wear upon the clothing as the Secretary of War may prescribe while receiving such course of technical instruction and flying training as shall be prescribed by the Secretary of War.

Sec. 3. That the Secretary of War is authorized to use all proper means and agencies for the encouragement of said corps, by detailing either Regular Army Air Corps officers or Air Corps Reserve officers called to extended active duty, to inspect the instruction and training of said candidates in such private flying schools, colleges, and universities, and centers of air instruction and training as may be selected by the Secretary of War for that purpose, under such regulations as he shall prescribe.

Sec. 4. That the Secretary of War is further authorized to encourage the development of said corps by permitting the use of such Army air fields from time to time as may not conflict with the work of the Air Corps of the Army of the United States and further by permitting the use in ground instruction only of airplanes, aircraft generally, and equipment, belonging to the Air Corps of the Army of the United States, if and when, in the judgment of the Secretary of War, such use is wise and proper in promoting the technical training of said corps.

Sec. 5. That upon the completion of such course of training as shall have been prescribed by the Secretary of War and upon the satisfactory passage of final examination and tests as may be prescribed for candidates of said Air Reserve Training Corps, the Secretary of War shall issue certificates of appointment as members in the Air Reserve Training Corps, and said members shall then be entitled to wear at pleasure such insignia and/or other designations and decorations upon the clothing as the Secretary of War shall prescribe. These members of the Air Reserve Training Corps shall be kept listed as to their addresses, business occupations, and other pertinent facts, so that the same may be available on shortest notice for service in the national defense in the event of a national emergency.

Sec. 6. That the Secretary of War is authorized to give preferment for appointment as flying cadets (heavier-than-air) and for detail to the Regular Army Air Corps Training Center for flying instruction of the most promising and desirable members in the Air Reserve Training Corps: Provided, That they also meet the mental, moral, physical, and educational qualifications prescribed by the Secretary of War for appointment of flying cadets of the Air Corps, Army of the United States. The limitations on the appointment of cadets under this Act will be only such as the limitation of vacancies under existing laws shall dictate.

Sec. 7. Such laws or parts of laws as may be inconsistent with the foregoing are repealed.

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FEDERAL INSPECTION OF 41st DIVISION AVIATION
By Lieut. Ellsworth C. French

No one knows the answer yet, but Colonel Roy C. Kirtland of the Presidio of San Francisco, Ninth Corps Area Air Officer, seemed pleased after he had completed the annual Federal inspection of the 41st Division Aviation, Felts Field, Spokane, on Sunday, March 8th.

The organization was not entirely new to Col. Kirtland, as he quartered with the Division Aviation during its two weeks of camp at Fort Lewis last year, when the 81st Division assembled for its first division camp since the World War.

Rainy weather compelled Colonel Kirtland to inspect the personnel in the Division hangar. In his inspection party was Major Robin A. Day, Commanding-Instructor of the organization; Capt. Claude Owen, Operations Officer, and Lieut. Harold Hansen, Adjutant.

The Colonel requested that all leather flying equipment be displayed on the hangar floor, and as he walked among it he remarked: "I like to see that the flying equipment is in good shape."

Colonel Kirtland was particularly interested in the new installation of earphones in helmets as designed by Captain John Walters, Flight Surgeon. After inspecting the helmets, Colonel Kirtland advised Lieut. Charles O. Holter that he would bring his helmet north the next time that he came and have the earphones installed under the new design.

Not a section of the Division Aviation escaped the inspection of the Colonel, who showed a keen interest in supplies and equipment. Flights in tactical problems were carried out, although not requested by Colonel Kirtland, who did display an interest in the preparations of the operations orders. Addressing the officers on property responsibility, he explained that "nothing I have found here prompts my remarks other than the extreme importance of property responsibility

All phases of the National Air Defense Demonstration at Felts Field on May 29-31, 1936, were fully explained to Colonel Kirtland, who approved the idea. "I'm going to try and come back for the demonstration, and it is my purpose to be in camp again with your organization at Fort Lewis in June," he said upon his departure.

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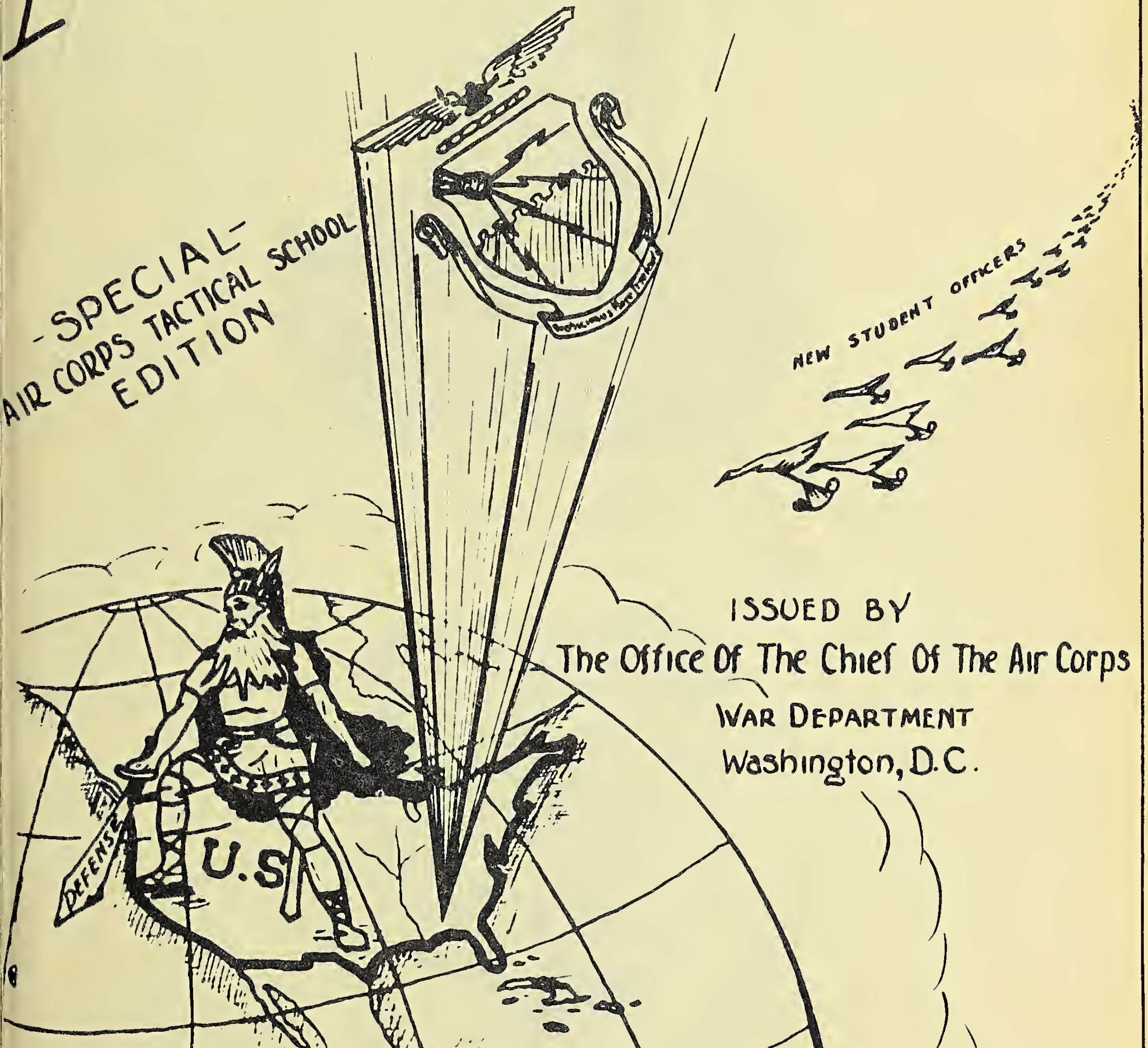
Captains Douglas Johnston and Lawrence P. Hickey, Air Corps, were promoted to Major, with rank from March 1, 1936.

AIR CORPS NEWS LETTER

-SPECIAL-
AIR CORPS TACTICAL SCHOOL
EDITION



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COL. A. G. FISHER A.C.
COMMANDANT

VOL. XIX AIR CORPS NEWS LETTER NO. 8.

Information Division
Air Corps

April 15, 1936

Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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FOREWARD ON MAXWELL FIELD

By Colonel A. G. Fisher, A.C., Commandant

IN February, 1910, Mr. Wilbur Wright arrived in Montgomery, Alabama, with the object in view of locating a site for the establishment of a flying field and training center for aviation in the South, A committee of the Commercial Club of Montgomery, predecessor of the present Chamber of Commerce, met with Mr. Wright, and a number of fields in the vicinity of Montgomery were inspected. The one selected by Mr. Wright, and subsequently used by him and his instructors in teaching the art of flying, is the site of the present Maxwell Field, home of the Air Corps Tactical School of the United States Army. Certainly, insofar as inspiration and tradition is concerned, there could be no fitter spot in this country for the location of a school, the mission of which is the education of officers in the technique, tactics, and strategy of Air Forces.

The Air Corps Tactical School was organized at Langley Field, Virginia, in 1920 under the name of the Air Service Field Officers School. Two years later, that designation was changed to the present one. The function of the school is to train officers for command and staff duties in all types of Air Force tactical units, as well as to acquaint officers generally, whether their duties be primarily connected with technical functions, supply, or administration, with the vast correlated problems which are involved in the planning, administration, supply and operation of an Air Force. Surely everyone must realize that the ability of an Air Force to carry out its mission in time of war with maximum efficiency depends almost entirely upon the planning and training that is done in time of peace. It is essential, therefore, that all officers directly connected with any phase of this peace-time planning be acquainted with the problems which must be met by the Air Force in time of war. The Air Corps Tactical School, whose faculty is made up of officers especially selected for their experience, education and knowledge of air warfare and the strategy and character of air power, actually performs the function of a clearing house where ideas of tactics and technique may be evaluated by faculty members with a view to their possible inclusion in the curriculum of instruction. Here, also, consideration and study are given to the potentialities of air power and appropriate lectures given to the student body on this subject.

No officer of the Army, whether he be in the Air Corps or in any of the other branches, could fail to improve vastly his conception of the influence of air power on the conduct of war by taking the course of instruction at the Air Corps Tactical School.

The instruction here is not, by any means, limited to air subjects. A comparatively thorough course is given, by instructors detailed from the ground arms, in all phases of ground warfare, in the tactics and employment of Infantry, Cavalry, Field Artillery, Antiaircraft Defense, Logistics, and combined arms, as well as in naval operations.

Maxwell Field is also the home of the Air Corps Board, whose duties consist of the study of major problems and projects which may be, from time to time, referred to it by the Chief of the Air Corps, or which may be originated by the Board itself.

It is contemplated establishing here a composite group which will be composed of one squadron of each of the several classes of military aviation. The principal purpose of this group will be to service-test new conceptions of tactics and technique. In other words, it will be in the nature of a laboratory in which new thoughts are tried out and new equipment tested before being sent out to the tactical organizations of the Air Corps throughout the United States and its foreign possessions.

Surely it should be the ambition of every Air Corps officer to take the course of instruction at the Air Corps Tactical School. Without question it will be a requirement, within the near future, that any officer selected for command and staff duty or any key position in the Air Corps, and any Air Corps officer selected for duty with the civilian components of our Army, must be a graduate of the Air Corps Tactical School.

DEPARTMENT OF AIR TACTICS AND STRATEGY

By Lieut.-Colonel H.L. George, A.C., Director

THE Department of Air Tactics and Strategy is charged with instruction in the several classes of aviation - Attack, Bombardment, Observation and Pursuit - as well as in Air Force. The Air Force course is preceded by instruction in the several classes of aviation as well as in air logistics and certain essential technical subjects.

By the time the student has arrived at the point in the schedule where he can demonstrate his ability in the handling of air forces, his initial interest has been compelled to withstand the pressure of all this very essential preparatory work. If he has been able to sustain this interest with a proper amount of fortitude and has not been seriously trampled upon, bitten or otherwise disillusioned or disheartened by his equitational activities, he now braces himself for the sprint down the home stretch. If he is a perfectly normal student, he will also be subjected at this time to the vision that pictures him in the not too distant future proudly clutching his certificate of graduation, with the cheers, huzzas and applause of wives, sweethearts, classmates and, lastly, the superfluous faculty, ringing sweetly in his blushing ears.

The objectives of instruction in the employment of Air Forces should be of interest not only to prospective students, but also to the members of other classes who have long since left the portals of this institution, because of the more or less traditional policy which has each year required the consignment of all the previous year's course to the waste basket. This has occurred not because of a desire for additional work on the part of the various instructors, but primarily because of the rapid development in types of aircraft changing year by year the conception of the employment of Air Forces and the potentialities of Air Power. We cannot continue to promise such an unending variety of instruction in the future, however, because this righteous gesture, although in itself not a very arduous task, immediately brings to the fore the pressing problem of writing the new courses. This procedure has served to ruin completely the otherwise normal placid dispositions of several well known faculty members.

The entire course in air instruction carried on by this Department comprises some 286 hours of scheduled work on the part of the student. This consists of lectures, conferences, illustrative problems, and map problems. In addition, one complete week is devoted to studies by committees of not more than four students each on subjects that are closely allied to the instruction given in the school. Although only a week is allotted for the preparation and presentation of the several committee reports, the studies are sent out to the committee in sufficient time to permit the assembly of the necessary material for research. The reading of the reports to the class by the committee members is followed by a general discussion and critique.

During the map maneuver which terminates the school year, the class is divided into several Red and Blue Air Force commands, each with an appropriate staff organization. A strategical situation involving the air defense of the United States is presented, and the various commands prepare the decisions, plans, orders and staff reports that are called for by the requirements issued during the week that play continues. Considerable enthusiasm for this form of instruction has been evidenced by the classes graduating within the last few years. As a matter of fact, play of the maneuver becomes, at times, sufficiently strenuous and aggressive on the part of both belligerents to make the lives of the unfortunate umpires exceedingly unhappy, if not actually precarious. The respective commands become engrossed in the annihilation of each other's forces.

The instruction given in this Department is subdivided under several different headings, each of which has a distinct scope and purpose. These subdivisions are not only the logical groupings of the subjects which are covered, but, in addition, constitute projects around which the future expansion of the courses are to be coordinated. The following is a brief summary of the subjects covered in the Department of Air Tactics and Strategy:

AIR FORCE.

Air Warfare. - The characteristics of air forces, elements of air strategy, air force offense and defense, air bases, organization and composition of air forces, and the influence of air power upon warfare.

Principles and Tactical Doctrine for Combat Aviation. - An introduction to the air tactics that are common to all combat aviation, including doctrines for air attack, air combat, and air observation.

Air Forces of the Army. - The functions of the Army and the Navy, organization, control, missions and principles of employment of the Air Forces of the Army.

Antiaircraft Defense.- Integrated systems of antiaircraft defense, involving the employment of Pursuit aviation, antiaircraft artillery and the measures for security and passive defense in the defense of the air base and other establishments.

Air Operations. - Doctrines of employment for combat aviation, plans and orders, and the employment of the Air Force in typical strategical situations.

ATTACK AVIATION.

This course covers the function, organization, destructive agencies, materiel, methods of applying destructive and neutralizing agents and formations in detail. The tactics and technique of the Attack Group and lower units, both during day and night operations, are discussed and the principles covered are applied and illustrated.

BOMBARDMENT AVIATION

This course covers the function, organization, training, destructive agencies, materiel, methods of bombing and bombing accuracy, and formations in detail. The tactics and technique of the Bombardment Group and lower units, in daytime and at night, at high altitudes and at low, are discussed and the principles covered are applied and illustrated.

OBSERVATION AVIATION

This course covers the function, organization, equipment, technique and tactical employment of Air Force Observation, and the function, organization, equipment, technique and principles of employment of ground force observation aviation. The operations of both are applied and illustrated.

PURSUIT AVIATION

This course covers the functions, organization, training, weapons, equipment, and tactics and technique of Pursuit tactical units. Gunnery principles as they influence the tactics and technique of Pursuit are covered in some detail, and their practical application is illustrated. The coordination of Pursuit operations and tactics with the various ground agencies, as well as the organization, composition and use of an aircraft reporting net for Pursuit operations are fully covered and illustrated.

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FLYING OF THE STUDENTS OF THE AIR CORPS TACTICAL SCHOOL

By Major Lotha A. Smith, Air Corps

This year's class at the Air Corps Tactical School, consisting of 70 officers, 61 of whom are heavier-than-air pilots, started flying on September 5th as one of the courses at this school. The object of the flying course this year at this school was:

Compliance with War Department Training Directive to illustrate as many of the theoretical principles as taught in the school as the limited and inadequate flying equipment at this school would permit.

The flying equipment consists of: 9 O-19, 6 A-3B, 6 B-4, 16 P-12, 3 SU (Navy), 3 PT type airplanes, one C-1 Transport and one BT instrument instructional plane.

In view of the fact that it was necessary to comply with the requirement for instrument flying, and that only one plane suitable for instrument instruction was available at this station, the O-19 airplanes were equipped with hoods in order that they might be used for instrument flying.

With the above objectives in view, the students were scheduled to perform appropriate missions with the dual purpose of illustrating the tactical employment of the various branches in the Air Corps, also to complete the requirements of the War Department for pilots and observers. Flying was restricted due to the fact that the planes mentioned above also had to take care of approximately 40 post officers and instructors in also meeting their War Department flying requirements.

Necessarily, student flying has priority on airplanes, and from the 5th of September to December 10th, 37 flying periods for student flying were completed. During these periods every form of Air Corps flying was participated in, and the class average for pilots and observers was approximately 80 hours in the air. The above time included an average of 11 hours per student night flying, and 10 hours of instrument flying under the hood, besides illustrating tactical principles on the equipment that could be used for such at this post.

During the month of October, over 2500 hours were flown at this station and, with the limited number of aircraft available, it is felt that they were worked to practically the maximum capacity for sustained service.

Needless to say, the requirement to operate night and day demanded a great deal of cooperation by every one at this station, and indicates the high state of morale among the enlisted personnel.

Many of the students have much more flying time than indicated in the student average, due to the personal cross-countries which are open to all students on holidays and week-ends.

With the successful conclusion of the first half of the school year's flying, it is anticipated that all students at this school will more than satisfy the objectives as set for the student flying at the beginning of the year.

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Officers of the 2nd Infantry who arrived on April 1st at Selfridge Field, Mich., for temporary duty on contact training with Air Corps units for two weeks were Capts. Lewis S. Sorley, Jr., Robert W. Stika, 1st Lt. Carl E. Lundquist, from Fort Brad Mich.; 1st Lt. Samuel A. Daniel and 2d Lt. Harry W. Sweeting, Jr., of Fort Wayne, Mich.

THE ACADEMIC DEPARTMENT OF THE AIR CORPS TACTICAL SCHOOL

By Lieut.-Colonel Herbert A. Dargue, Air Corps

THE reason for the existence of Maxwell Field is the Tactical School, and accordingly all activities of the post pyramid in the attainment of the best course of instruction that it is possible to conceive and that conditions will permit. The large class of seventy students is here to put into one short year, or rather nine months, just as much tactical instruction as can be absorbed.

The Academic Department of the School, the activities of which are carried on under the direct supervision of the Assistant Commandant in accord with the policies of the Chief of the Air Corps and of the Commandant, is divided into four main departments, - the Department of Air Tactics and Strategy, the Department of Command, Staff and Logistics, the Department of Flying, and the Department of Ground Tactics. The Extension Course work is handled in a separate section directly under the Assistant Commandant.

The heads of the departments are held responsible for the work carried out by the various sections in their respective departments and are given considerable latitude in their work. They must properly coordinate the instruction both in their own departments and with other departments.

Naturally, courses in air instruction predominate, but due to the great differences in qualifications of student officers, it is necessary to start the course with fundamental principles and with such elementary subjects as Combat Orders, Maps and Photographs, Solution of Problems, etc. In order to understand and properly coordinate with the work of the other branches of the Army, the Department of Ground Tactics, throughout the school year, carries on elementary instruction, gradually progressing to the handling of larger units such as the Division and the Corps.

It has always been the desire to have flying demonstrate by practical missions the work taught in the classroom, but due to the necessity of meeting War Department minimum requirements, complying with a War Department Training Directive, and the lack of modern aircraft and even of sufficient numbers of any aircraft, the attainment of this objective is unfortunately in the lowest priority with the result that only the most elementary of practical missions, exemplifying the instruction in the School, are undertaken. Every opportunity is given the student officer to meet flying requirements.

The work in connection with the Extension Courses is a separate activity from the instruction carried on in the school, although, as stated above, it is handled directly under the Assistant Commandant. It is coordinated with the various instructional sections in the school. The enormity of this work is appalling and the many thousands of copies of Extension Course texts that are produced each year places a heavy burden on the reproduction activity. It is one of the most important activities, since by means of it instruction in air subjects reaches all the other Arms, the National Guard and the Reserve.

A Book Department is convenient to the students, both for recreation and refreshment, between periods of instruction and for the purchase, at minimum prices, of additional maps, books and stationery. Other articles may also be purchased at considerably reduced prices.

The library in connection with the school is one of the best in the service. It is kept up-to-date with the latest books and publications and affords students as well as faculty an excellent opportunity for research. A library committee of instructors passes upon all publications secured.

The Reproduction Section prepares practically all the texts used in the school, the principal exception being the texts used in the Department of Ground Tactics. Mimeographs, rotoprint and blueprint work is carried on in increasing quantities each year. From fifteen to twenty men are constantly employed in this activity. Book binding is also accomplished here.

The Air Corps Tactical School is an AIR school and, although much time is devoted to the ground arms, equitation, demonstrations at Fort Benning, etc., the air instruction dominates the course from the first to the last day of each school year. It is not an easy course. It is kept up-to-date by correspondence and visits to other Service Schools, The Command and General Staff School, The Army War College and The Naval War College, and by the closest cooperation with tactical units. The officers comprising the faculty are a conscientious, hard-working group, and as each comes and goes, his tour of duty brings forth improvement in his particular subjects of instruction or some benefit to the school as a whole. It is regretted conditions throughout the service preclude the possibility of more officers attending this institution, as the product of the Air Corps Tactical School is recognized throughout our corps by the demand for graduates and their assignment to important command and staff duties.

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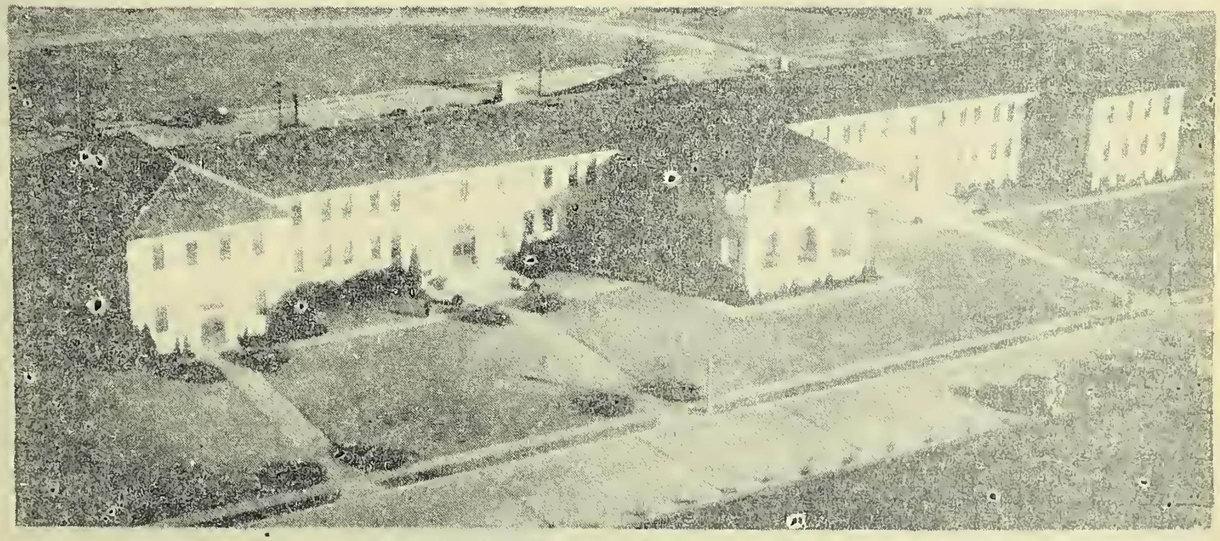
LT. COL. HERBERT A. DARGUE A. C.
ASSISTANT COMMANDANT



AUSTIN HALL

EXTENSION COURSE SECTION OF THE AIR CORPS TACTICAL SCHOOL

By Major John I. Moore, Air Corps

UNDER the provisions of the National Defense Act, it is provided that the Army of the United States shall consist of three components: The Regular Army, the National Guard (while in the service of the United States), and the Organized Reserves, including the Officers' Reserve Corps and the Enlisted Reserve Corps.

The training of the civilian components of our army, particularly the Organized Reserves, presents the most difficult phase in the development of the Army of the United States. For the Regular Army we have a system of educational institutions to provide military knowledge in addition to the training received in field maneuvers and regular instruction in combat functions in garrison schools and drills. The National Guard receives its training and instruction through periodical drills and summer encampments and by extension course work.

The training and instruction of the Organized Reserves (including both officer and enlisted personnel) is not as simplified as the National Guard. Briefly, this instruction and training is divided into two general classes: first, that received when they are called to active duty; second, that received or acquired through individual interest and effort between periods of active duty. The Organized Reserve, although maintained as a permanent organization, charged with continuing functions on an inactive status for which limited provision is made, has no means of its own for providing a military education for its members or for the active practical training of its personnel. It is almost wholly dependent upon the Regular Army for this military education and training.

In 1922, in order to provide a means whereby the members of our vast citizen army could obtain a military education and still carry on with their normal work, the Army Extension Courses were established. These were an adaption of the best of the civilian correspondence school methods to suit the needs of the military system. From a very small enrollment of 6,091 individuals in 1922, this enrollment had grown to 88,909 in 1935.

The primary mission of the Army Extension Courses is to provide:

a. (1) For reserve officers an opportunity to undertake a systematic course of study covering the military knowledge qualifications essential for their arm or service, to prepare them as far as practicable for their war-time duties and to assist them to meet the requirements for promotion.
   (2) For those seeking a commission in the Officers' Reserve Corps a means of meeting the military knowledge qualifications.
   (3) A basis for coordinated instruction in Reserve unit conferences and assemblies.

The secondary mission of the course is:

b. (1) To provide individual instruction for:
      (a) National Guard personnel, and
      (b) Regular Army officers.
   (2) To furnish assistance in preparing for the resident courses at Army Service Schools.

From a national viewpoint and from the viewpoint of the individual, the advantages of pursuing the Army Extension Courses are obvious. The nation depends largely for its defense upon its citizen army. The quality of defense will be in direct proportion to the efficiency of the officers in that army. Efficiency can only be attained and maintained by constant study and training. The position and importance of the individual citizen soldier depend upon mastery of his duties and functions; his reassignment and promotion depend in great part upon his own efforts and study.

The extension course of each arm and service consists of subcourses arranged in a logical and progressive order. In general, each subcourse covers one of the military knowledge qualifications in which one must qualify for initial appointment or for promotion to the higher grades in the respective arm or service.

The subcourses of the arms and services are grouped into separately numbered series (10-1, 20-1, 30-1, etc.) according to the grade for which intended and, in general, are applicable as follows:

10 series subcourses for appointment in the grade of second lieutenant.

20 series subcourses for promotion to grade of first lieutenant.

30 series subcourses for promotion to grade of captain.

40 series subcourses for promotion to grade of major.

50 series subcourses for promotion to grade of lieutenant-colonel.

60 series subcourses for promotion to grade of colonel.

The extension courses of the arms and services parallel as far as practicable the instruction given in the resident courses at the Army Service Schools insofar as this instruction is applicable to the war-time duties of reserve officers and is adaptable to instruction by extension course methods.

The preparation of lesson material is carried on by the following agencies:

(1) Chief of arms and services.- Sub-

courses pertaining to a single arm or service are prepared under the direction of and approved by the chief of the arm or service concerned and submitted to the War Department.

(2) Special War Department agencies.- Subcourses common to two or more arms and services are prepared by agencies specially designated by the War Department.

(3) The School of Aviation Medicine.- The Extension Course of the School of Aviation Medicine is prepared under the supervision of and approved by the Commandant of the School of Aviation Medicine.

(4) Command and General Staff School.- The Command and General Staff Extension Course and the Special Staff and Logistics Extension Course are prepared under the supervision of and approved by the Commandant, The Command and General Staff School.

All lesson material and special texts for the extension courses, except that of the extension courses of the Command and General Staff School and the School of Aviation Medicine, are reviewed, reproduced and distributed under the supervision of The Adjutant General.

The Air Corps Tactical School was designated by the Chief of the Air Corps in 1922 as the agency to prepare all Air Corps subcourses, and a separate section of the school was formed for this purpose. This section prepares and revises all subcourses for the Air Corps, except highly technical subjects, which are prepared by the Engineering School and the Air Corps Technical School. Twenty-four Air Corps subcourses and eighteen common subcourses are listed for Air Corps officers.

The subcourses as prepared by the Extension Course Section are as follows:

Theory of Flight H/A
Theory of Flight L/A
Aerial Navigation
Aerial Photography
Antiaircraft Defense
Air Operations
The Air Force
Meteorology
Camouflage
Air Intelligence
Engineering
Staff Duties
Logistics
Aerodynamics
Organization of the Air Corps
Employment of the Air Corps
Air Corps Communications
Interpretation of Aerial Photographs
Observation Aviation H/A
Observation Aviation L/A
Theory of Bombing
Air Corps Combat Orders
Employment of Balloon and Airship Units
Pursuit-Bombardment-Attack Aviation
Air Corps Supply System

Subject to certain limitations, the following are eligible for enrollment in courses offered in their respective arms or services:

(1) Personnel of the Officers' Reserve Corps and the Enlisted Reserve Corps.

(2) Personnel of the National Guard who may individually volunteer to take these courses in addition to their required National Guard duties, or who may be required to pursue an individual course of instruction under National Guard Regulations.

(3) Officers of the Regular Army on detached duty of a nature such as to preclude their receiving instruction through other agencies.

(4) Officers of the Regular Army serving with troops who are authorized by corps area commanders to enroll.

(5) Warrant officers and enlisted men who seek Reserve commissions and who, in the opinion of the station and corps area commanders, are qualified to pursue the courses.

(6) Qualified civilians seeking reserve commissions, if facilities for instruction are available.

(7) C.M.T.C. trainees of Red, White and Blue courses.

Under an order issued by The Adjutant General, July 23, 1932, the Extension Courses of the Air Corps will be used for theoretical instruction in Air Corps garrison schools.

The following is an extract from that order:

"(1) Air Corps Extension Courses will be used as texts, examination questions and answers in pursuing garrison theoretical instruction. These courses will be given under the supervision of the Corps Area extension schools or such other agency as the Corps Area Commander may direct.

(2) All Air Corps officers, below the grade of Lieut.-Col., who are assigned or attached to Regular Army tactical units and who are not graduates of the Army War College, the Command and General Staff School, or the Air Corps Tactical School, will pursue these courses as follows:

(a) Second Lieutenants start with the A.C. extension courses, series 20-1.
(b) 1st Lieutenants with less than 10 years' service to start with the A.C. extension courses, series 20-12 A.C. Combat orders.
(c) All officers with over 10 years' service to start with A.C. extension courses, series 30; upon completion of series 30, these officers to take series 40.

(3) Each officer will complete 100 hours of extension school work during the year. Commanding officers will arrange training schedules so as to assure each officer a reasonable amount of regular duty time during the day for work on extension courses.

Air Corps officers on duty at exempted stations may at their own discretion pursue appropriate extension courses.

Officers will be exempt from further instruction in subjects for which they hold duly authenticated certificates of proficiency."

The above order has been carried out in general at the majority of Air Corps stations. The main idea behind the issuance of this order was to provide as nearly as possible a uniform system of garrison school training for all Air Corps officers, as well as to serve as a preliminary course for officers who may come to take the resident courses at the Air Corps Tactical School.

Under normal procedure each subcourse is revised and brought up-to-date every three years or sooner if the subject matter should be obsolete due to changes in equipment, methods of operation or tactics.

All texts, lessons and map problems are carefully coordinated with the resident instructors at the school, and every effort is made to parallel the teachings of the school. All subcourses are forwarded through the Chief of the Air Corps for check and then to The Adjutant General for final check and distribution.

As of the School year 1935-1936, 2086 Air Corps personnel were enrolled for the subcourses and 1687 completed one or more subcourses for a total of 5562 subcourses, which involved a minimum of 83,833 hours of work.

The initial distribution of extension course material by The Adjutant General (for all arms and services) for the 1935-36 school year involved the following:

Pieces (lessons, solutions and texts)	4,187,255
Number of packages and envelopes wrapped and sealed . . .	11,878
Number of mail bags sent out	1,452

From the above it can be readily seen that the Extension Courses are widely used and have an important place in the army educational system.

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THE AIR CORPS TACTICAL SCHOOL LIBRARY

By Miss Margaret Rippere, Librarian

THE Library of the Air Corps Tactical School is, on the surface, the usual library connected with and serving a school of higher education. The much used reference collection, the magazine and newspaper reading room, the small and scattered collection of general reading matter are all much the same. However, on close examination of the main collection, the uniqueness of the Library becomes evident. Here is a highly specialized collection of military and aeronautical books, not technical aeronautical, but tactical. So few good books are written on this new but fascinating subject that all books pertaining to the history and development of aviation as a combat arm must be purchased and thoroughly perused in order to extract every item of valuable information. The entire collection comprises about ten thousand volumes, of which the world war history and the military science sections are the largest.

The document collection contains about eight thousand assorted pamphlets and reports. The confidential reports from the various Military Attaches on all subjects of interest to our officers are of tremendous value for research and for keeping abreast of current military matters. They are also a source of greying hairs to the librarian in her efforts to make them available and easily accessible to the proper persons. Contained also in this collection are publications of the various departments of the National government and other agencies whose activities would affect the teachings or policies of the Air Corps.

The instructors, in the preparation of their lectures and texts, are the most constant users of the Library. The Air Corps Board, whose offices are in the school building, also make valuable use of the material in the library in preparing their studies. While the students have very little time for much outside reading, they avail themselves of the opportunities they do have and derive much pleasure and benefit from the military and professional literature.

The Library is arranged and run according to customary procedure. The Dewey decimal system of classification is used throughout, modified and expanded in instances as necessitated by the special collection. The cataloging is done according to A.L.A. and Library of Congress rules, and the documents follow very closely the system worked out in the Military Intelligence Division of the War Department. The Secretary of the School is the Officer-in-Charge of the Library, with two trained civilian librarians, and one enlisted assistant under him.

The Library is located on the first floor in the south wing of the school building, and the equipment and arrangement are the latest ideas in up-to-date library planning.

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IMPROVEMENTS AT SCOTT FIELD, ILL.

WPA laborers have begun leveling off the irregularities in the landing area at Scott Field, Ill. At present they are cutting down a hump in the northwest portion thereof. This particular hump casts a long shadow when the night lights are used.

The WPA laborers have almost completed the dismantling of the old officers' garage and the landscaping project. The base constructed at the new location for the transformer is finished and awaiting the transfer of the electrical equipment.

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On March 30th, Capt. Leo H. Dawson was assigned as C.O., 57th Service Sqdn., Selfridge Field, with temporary rank of Major.

DEPARTMENT OF GROUND TACTICS

By Lieut.-Colonel William N. Porter, C.W.S.

THE Department of Ground Tactics, Air Corps Tactical School, is comprised of sections under officers of the Infantry, Cavalry, Field Artillery, Coast Artillery, and Chemical Warfare Service, who conduct the courses in their respective specialties, and who together conduct a course in the Combined Arms. The amount of time devoted to instruction in ground subjects, while generous, is the minimum necessary to carrying out our mission.

The department exists primarily for the purpose of familiarizing officers of the Air Corps with the powers and limitations of the combatant ground troops, and with the technical and supply branches which serve them.

Many officers of the Air Corps do not have an opportunity to attend any service school but this. Their normal duties bring them but little into contact with the ground arms. A large percentage of the class comes to the school with only the vaguest ideas of ground tactics and ground units. It is the mission of the Department of Ground Tactics to remedy this deficiency.

The majority of the Air Corps officers detailed to Leavenworth each year go direct from the Air Corps Tactical School. The instruction in ground tactics here is so organized as to fit these students, as well as possible in the time allowed by the very crowded schedule, for the course at the Command and General Staff School, and thus enable them to compete upon a more equitable basis with students from the other special service schools.

More important than any of the above functions, however, is the building up of an understanding of the methods and tactics which will enable the ground arms and the Air Corps to work together with greater unity of purpose. This is a line of thought which has been seriously neglected at many of the service schools, because of the difficulty of arriving at sound cooperative tactics with the data available.

We, the instructor personnel in this department, have been made to feel ourselves very much a part of the school; and, with students from the ground arms, make up a group who will take back to the "other arms" an understanding of Air Corps powers and limitations which will be of great value to air and ground forces alike.

In the modern army, an officer who has not as full an understanding of Air Corps tactics and capabilities as he has of those of the other arms, is poorly equipped for his professional career. To officers not in the Air Corps there is no question but this school is the most important of all the special service schools, with the single exception of the school of their own branch.

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THE AIR CORPS BOARD

By Captain Gordon Saville, Air Corps

IN furtherance of recommendations in November, 1934, of the Special War Department Committee, headed by the Hon. Newton D. Baker, the Air Corps Board was created and started its activities at Maxwell Field, Montgomery, Ala.

For several years the Air Corps Tactical School had maintained an Air Corps Board, consisting of the staff and faculty acting in addition to their other duties. The results of this arrangement having proven unsatisfactory, the Air Corps Board was organized as an independent activity under, and as a part of, the Office of the Chief of the Air Corps. Its membership consists of the Commandant and Assistant Commandant of the Tactical School, who are ex-officio members in addition to their other duties, and a number of regular working members who have no other duties.

The Air Corps Board is charged with the study of such subjects as may be referred to it by the Chief of the Air Corps, and of such subjects as it may itself originate looking toward the improvement of the Air Corps.

In general, the Air Corps Board has been charged by the Chief of the Air Corps with the making of recommendations on matters which involve considerable study and research, rather than on matters involving only immediate decision as to policy.

At the present time the Air Corps Board consists of four working members, present or under orders, and two ex-officio members.

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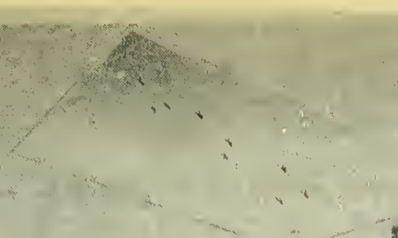
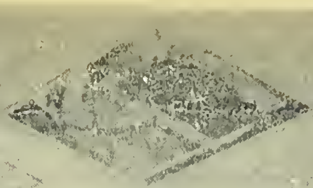
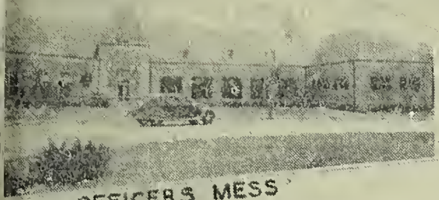
Lieut.-Colonel Barton K. Young, Air Corps, is under orders to proceed to the Hawaiian Department, upon the completion of his present course of instruction at the Army War College, and to assume command of the 18th Composite Wing, Fort Shafter, T.H.

Colonel Fred H. Coleman (Lt.-Col.) is relieved as Commanding Officer, Fairfield Air Depot, Oct. 11, 1936, and from temporary rank, and is to proceed to Panama.





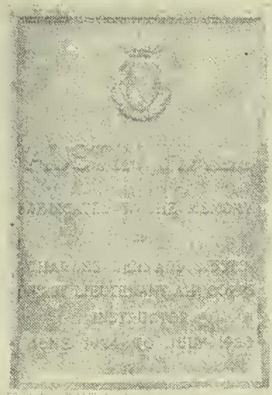


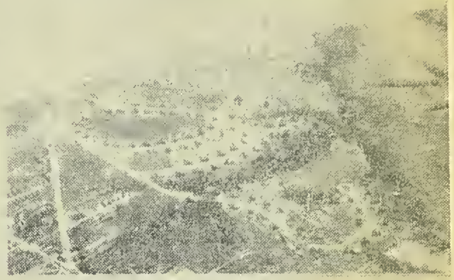
OFFICERS MESS

A.C.T.S.

OPERATION - PARACHUTES

MAXWELL FIELD ALA.





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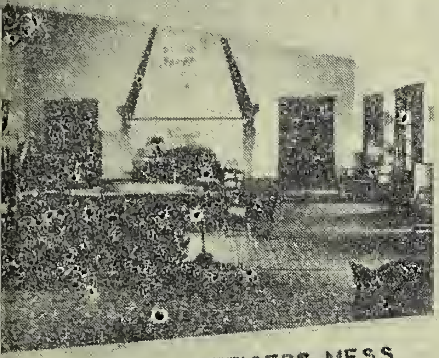

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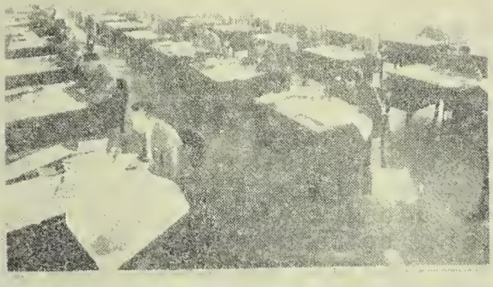
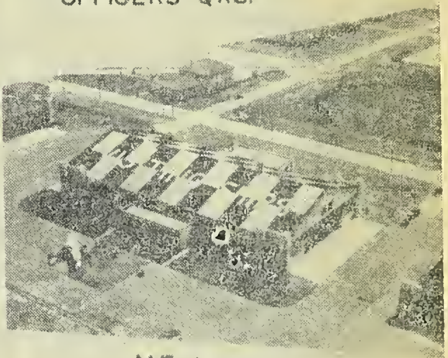


A.C.T.S. STUDENTS IN CLASS



M.F. HANGER

THE FLYING TRAPEZE

COMMANDING OFF. QRS

STUDENT OFF. QRS.

THE AIR CORPS TACTICAL SCHOOL

(As Seen by an Air Corps Student.)

By Major Ira C. Eaker, Air Corps

IN the Air Corps Tactical School at Maxwell, two men have had a dream come true to an extent few mortals are ever privileged to witness the fulfillment of their visions. These two men are Congressman Lister Hill and Colonel Walter R. Weaver.

Some years ago I heard them outline the project to the Assistant Secretary of War, the Honorable F. Trubee Davison. Their glowing accounts of what could be realized here on the banks of the meandering Alabama River were almost unbelievable as one gazed out upon the delapidated post that then existed - a helter-skelter collection of ramshackle huts scattered without pattern over a barren landscape. It was not unlike the negro tenement section alongside. Today the reservation is a well-kept park; on it are more than one hundred permanent structures, well-designed, sited and landscaped. The whole constitutes a military post inferior to few, if any, in the Army.

Maxwell Field exists as the home of the Air Corps Tactical School. That is its only military activity and purpose, which is a big factor in the results which have been obtained and a fortunate thing for the welfare of the student population. A survey of this school, from the point of view of the student, it seems to me, falls into several logical subdivisions: the city and surroundings, the post, the school, the course of instruction, the flying, the facilities for exercise and recreation and, lastly, the social life.

The field is located adjoining the city limits of Montgomery, Ala., a city of approximately 70,000, situated in the east central portion of the state on the banks of the Alabama River. To the newcomer it gives the impression of a sleepy, slow-moving, old Southern town. That it is in many respects. Its people, however, make up any shortcomings the city may seem to hold for those who favor a surging metropolis. They are courteous, kindly, hospitable and very friendly. There is wholly lacking that feeling, present in some "Army" towns, that the military post exists to give the civil populace a livelihood and an income. Relations between the civil and military are excellent. The municipal government and city police show no resentment toward the Federal forces at the city's door, but cooperate willingly for the mutual advantage of both. Army wives who prefer a larger city on special shopping occasions find it but a three hours' drive to Birmingham, four hours' to Atlanta, seven hours' to New Orleans, and but one day to the cities of Florida on the south. It would be difficult, indeed, to find a better civil setting for the school than the city of Montgomery affords.

The post is well organized to perform the administrative functions incident to supervising the school without friction and for the students' advantage. One point is early impressed, and that is that the student will have nothing to do save pursue the course of instruction. There are no other military duties, as all such are performed by a permanent complement of capable officers. The post affords the usual facilities, commissary, exchange, utilities, barber shop, tailor shop, etc., to such an extent that it is unnecessary to leave the post for any of the living accommodations. Quarters are excellent. They are assigned according to size of families, with little regard to rank. The majority of students are quartered in one section of the post in two-story houses of a common type - six rooms, screened-in sleeping porch and garage. This area is about one mile from the school building and administrative section of the post.

The school is housed in a large three-story building with excellent appointments and accommodations. The class rooms, lecture rooms, and study halls are large and well lighted. Desks are provided students both at home and at the school. One of the best features connected with the school is the military library. It is invaluable for reference purposes and affords all the latest military books, both U.S. and foreign. Here, too, are collected studies and committee reports by previous classes and War Department Staff Studies, which the Air Corps officer will find sources of interest and information. The library alone would make the school worthwhile. All in all, the physical surroundings for the student are all that could be desired.

The course is designed, apparently, with two primary purposes: one as a preparatory course to the Command and General Staff School, at Leavenworth; the second for the education of the Air Corps officer in his own arm - the Air Force. During the first half of the school year the student gets the impression that he is attending a service school of one of the other arms or, rather, a combination of all the service schools of the other arms. During this time he is turned over to the tender mercies of Field Artillery, Cavalry, Infantry, and Chemical

Warfare officers who teach the precepts of modern warfare as fought by those arms. It is early quite apparent that the other branches have selected their instructors with great care, as the type of instruction is of a high order. During this period one begins to feel a little apprehensive about the Air Corps officers who are going to have to maintain this standard. After Christmas vacation, the student begins to find that this is, after all, an Air school. Bombardment, Attack, Observation, Pursuit and Air Force are then thrown at the student with bewildering rapidity. There is a text for each subject; there are lectures in class, illustrative problems, and the much-dreaded map problem - four-hour quiz to you, Sir - reserved for the faithful for every Friday afternoon to make the week-end really appreciated.

Each student is graded on the proficiency of his individual work, but high marks are not deified. No student is told his relative standing and, as a result, there is very little evidence of "boning" to lead the class and no hostile competitive spirit. It will require two hours' study per night, five nights a week, for the average student to make average grades. The Commandant and Assistant Commandant recommend against more, and urge that all students conclude their "night-work" by ten o'clock. Many students have found it more efficient to put in this two hours in the morning and, since school does not start until 9:00 o'clock, that is possible without hardship.

Recitation periods are from 9:00 to 12:00, with the afternoon reserved for flying. Wednesday afternoon, Saturday and Sunday are for recreation and rest.

Recreational facilities are exceptionally well provided. The 18-hole golf course is good; there are tennis courts, squash courts, a good swimming pool, a skeet range, and a stable containing some forty mounts in good health;more's the pity, say a large majority of the students. Riding instruction is a part of the course; it is given from 7:15 to 8:15 every other morning. The present class has suffered five major casualties from riding to date, including broken bones - an arm, a leg, and miscellaneous ribs. There is considerable agitation on the part of the present class to make riding optional. The student council has recommended that the Tactical School Cavalry be placed high on the Army's priority list for early mechanization. Students are encouraged to get exercise of their chosen form and given ample opportunity and equipment therefor.

Social activities are reserved for the period from Friday evening to Sunday evening weekly and on holidays. Such gatherings are distinctly discouraged on study nights. The Officers' Club provides ample social functions both for officers, their wives and families. The principal impression one is given about post social life is that there is no "class consciousness"! Post officers and students drop all distinctions when they leave the class rooms. Due to the efforts of the Commanding Officer, students are made to feel that they are a part of the post life despite the temporary character of their stay. This spirit, perhaps more than anything else, makes the stay at Maxwell Field a pleasant as well as highly instructive one.

There is no question but that the course at the Tactical School will improve the efficiency of any Air Corps officer and, strange as it may seem, he will enjoy his year here. He will look back upon it with satisfaction, and there will be distinct regret when the time come for departure for another station. To me that is a remarkable recommendation for the school, seeing that it is well known that though "life may begin at forty," school days at that age should be over as the average individual sees it. If military education may be likened to a bad pill, it is not too much to say that a very satisfactory sugar coating is put on it here at Maxwell Field.

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AIRLINES UTILIZE BOLLING FIELD AS AIRPORT

Recent flood conditions along the Potomac River left the Municipal Airport at Washington, terminal for Eastern, Central and American Airlines, in a decidedly unsafe condition, and for several days the commercial lines used Bolling Field, D.C., as a base of operations. Civilian and Army crews cooperated in such a manner as to expedite traffic,and each trip went through on scheduled time. Conditions at the Municipal Airport improved within a few days, and the commercial lines again shifted operations to their own field. The entire change went through so smoothly as to speak well for the efficiency of both the commercial companies and the Army crews.

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YES, IT WAS ALSO COLD AT FAIRFIELD, OHIO.

The News Letter Correspondent from Patterson Field, Fairfield, Ohio, says that the past winter has been of the kind that grandfathers delighted to tell their grandchildren about. According to the oldest inhabitant, he adds, not since "Mad Anthony" Wayne chased Indians in this part of the country has there ever been such a winter. Water and air lines on the engine test stands froze up; frequently the temperature inside the hangars was lower than that outside, and the central heating plant always picked the coldest days to break down. After all the grief experienced, the first robin was a welcome sight.

A DOUGHBOY AT AN AIR CORPS SCHOOL

By Major M.F. Lindsey, Infantry

THE detail to attend the Air Corps Tactical School is much sought after by the Infantry officers, and I felt greatly flattered when I was notified that, if funds were available, I would be ordered to the School for the 1935-36 course. When the order was finally issued, I was again greatly flattered by the number of congratulations received from all officers, but especially those of the ground arms. The Air Corps officers whom I knew all praised the school, not only from an academic viewpoint alone, but as a good post with excellent quarters and a good place to live. The prospectus of the School, which arrived shortly thereafter, together with a letter from the Commandant, corroborated their statements. Upon arrival at the School, I found this post came up to all expectations. Everything was new and modern in every respect - excellent quarters, a large and well equipped headquarters and school building, and a beautiful, modern officers' club with courteous and efficient service. The Commanding Officer and his efficient staff were taking a personal interest in the assignment of quarters, and the Quartermaster was exceptionally accommodating.

My first impressions of the post were distinctly good. After my first good impressions, I began to feel as if I were an outsider. All of the Air Corps officers seemed to be fully acquainted and "sufficient unto themselves." I was almost as much a stranger to the other ground officers as to the Air Corps officers. We ground officers gradually gravitated together, and from our fancied treatment by the Air Corps officers we dubbed ourselves the "Non-Christian Tribes," suggested to us by one of our group (Major McCatty of the Coast Artillery Corps). As time went on and we were thrown more closely with the air officers in the class room, equitation classes and practical flying, this reserve between us gradually broke down. I now find the class to be composed without an exception of high type officers. The Assistant Commandant, Colonel Herbert A. Dargue, in his opening address, said the members of the class were specially selected, and after six months of rubbing elbows with them, I am convinced of this.

The course has been highly interesting and instructive; it is well organized, and the subjects are in the right proportion. However, I was surprised to find map reading and navigation taught at the school, but after observing for a few periods was greater surprised by the lack of knowledge of these two subjects displayed by a large number of the class. Equitation, which we attend every other morning between 7:15 and 8:15, is a great drudgery; however, I know of nothing that can take its place for exercise in the open. If we didn't have to ride we would only sleep an hour longer in the morning. The practical flying for a ground officer is interspersed with interesting and dull periods. If he has something to do, such as a navigation problem, it is interesting, but to ride around in the fuselage of a Bomber for two and a half hours is extremely dull.

As for the teaching methods, I miss the "applicatory" method, or "Explanation," "Demonstration" and "Examination" to which I have become accustomed in the Army, and which is present in most of the branch schools. If, after the theoretical classroom instruction in Bombing Probabilities or an attack against an airdrome, we could have gone out and flown the problem, dropped the bombs and applied the technique taught, the instruction would have been more convincing. Of course, this is no fault of the School, as it does what it can with the material available.

I have been impressed by the attitude of some of the instructors in apologizing and making excuses for the lack of conclusive proof to bear out their theories regarding tactics and technique (particularly the former). It seemed to me to weaken their case. Practically all the new ideas on tactics of the ground arms are based on theory only, and in some cases on weapons that have not even been developed. I don't think the Air Corps should be so apologetic about theirs. On the other hand, I have been impressed by the knowledge of their subjects displayed by the instructors and their broad viewpoint.

My tour as a student at the Air Corps Tactical School has been an unusually pleasant and profitable one. It has given me an insight into, and an appreciation of, the problems of the Air Corps. My appreciation of the airplane as a valuable weapon has been considerably increased and, contrary to the belief of some, and in keeping with the majority of the ground officers, I have a high regard for the professional attainments of the officers of the Air Corps and a strong belief in the capabilities of the airplane. I consider it a privilege to have been a student at the Air Corps Tactical School.

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Effective July 1, 1936, following the completion of his course of instruction at the Army War College, Lieut.-Colonel John F. Curry, Air Corps, is detailed as a member of the War Department General Staff, Washington, and will report to the Chief of Staff for duty.

MAXWELL FIELD

By Major S. F. Landers, Air Corps

MAXWELL Field is located in the west edge of Montgomery, about two miles from the center of the city, and overlooks the Alabama River, which forms the northern boundary of the reservation. All buildings are new and modern, having been constructed within the past five years. All quarters and barracks are equipped with automatic gas furnaces and water heaters and, except for 13 NCO bungalows, all have mechanical refrigerators installed. There are 99 sets of officers' quarters. All are of the two-story, one-family type. Company officers' quarters have three bedrooms, an attic, and, in most cases, a sleeping porch. Field officers' quarters are similar, but have four bedrooms. Each set has a garage. The quarters are in a wooded area, and streets are laid out in an irregular manner to preserve all trees possible. This is one of the principal reasons why Maxwell Field is generally considered to be one of the most attractive posts in the Air Corps.

The bachelor building contains 14 two-room apartments for officers stationed here and 4 single rooms available for visiting officers. Recreational facilities include an officers' club and mess, swimming pool, tennis courts, an excellent 18-hole golf course, three squash courts, horses for riding, a skeet range, basketball and volley ball floor, baseball diamond, football field, and cinder track. Good hunting and fresh water fishing are to be found in the vicinity, and excellent salt water fishing is available in the Gulf of Mexico, about 150 miles south.

Winters are mild, with temperatures below freezing normally occurring only a few days each winter, while snow is seen only at intervals of several years. Golf and other outdoor games are played the year round.

The recreational facilities named above are available for both officers and enlisted men. Noncommissioned officers have their own club, and one of the swimming pools is located near the barracks and noncommissioned officers' quarters. There are 77 sets of noncommissioned officers' quarters. Thirteen are small one-family bungalows, while the other 64 are large two-story duplex houses, each with four bedrooms and equipped with automatic gas furnaces, water heaters, mechanical refrigerators, etc.

Very little fatigue duty is necessary, as most of the upkeep of the post is done by Federal prisoners, a camp of which is located on the reservation. Each barrack is equipped with a cafeteria type mess so that food is always served hot, whether a man eats early or late. Labor-saving devices, such as dish-washing machines, bread mixers, gas ranges, potato peelers, etc., reduce kitchen work to a minimum.

The authorized strength of the post is 641 Air Corps men and 69 Quartermaster, Medical, Signal, Finance, Ordnance, etc. Quarters are available for all noncommissioned officers of the first three grades. There are normally about 125 to 130 officers assigned to the post, 70 of whom are students. At the present time, eleven of these are living off the post on commutation status.

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A CHEMICAL WARFARE OFFICER AT THE AIR CORPS TACTICAL SCHOOL

By Captain C. M. Kellogg, C.W.S.

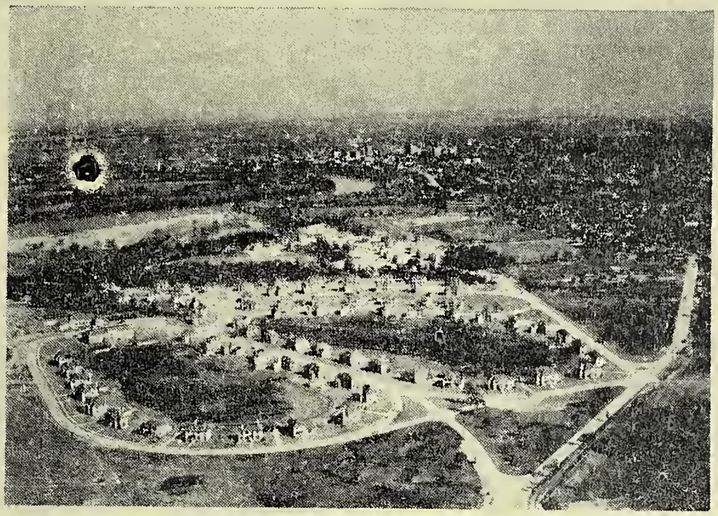
A detail to the Air Corps Tactical School is much desired by chemical officers for perfectly obvious reasons. The school and the post of Maxwell Field have an established reputation in our service. Several of our most capable officers have served as instructors in the Air Corps Tactical School, I know, to the mutual benefit of the Air Corps and the Chemical Service. The dispersion of war chemicals by means of aircraft had its inception about 1920-21, and all the developments have occurred since that time. The Air Corps and the A.C.T.S. have had a decided influence on the course of experiments conducted by the technical divisions of the Chemical Service at Edgewood Arsenal. Close cooperation between the Chief of the Air Corps and the Chief of Chemical Warfare Service is apparent in this work.

On arrival at Maxwell Field, I found conditions as described - uniformly excellent. The quarters assigned are the best I have ever occupied in my service. From the Commanding Officer on down, all the post personnel have been uniformly helpful and pleasant to serve under and with. The various activities - Quartermaster, Post Exchange, Post Hospital, Air Corps Supply, Operations Office, Officers' Club - all serve the student officer in an admirable manner. Living conditions and recreational facilities are of the best. Anyone interested in sports finds available the 18-hole golf course, tennis, squash, swimming, skeet, hunting (nearby), volley ball, and equitation. The best athletic facilities of any post

(Continued on page 15)

COMMANDING OFFICERS QRTS.

CO. OFFICERS QRTS



OFFICERS QRTS. AREA

CO. OFFICERS QRTS.

FIELD OFFICERS QRTS.

THE COMMAND, STAFF, AND LOGISTICS DEPARTMENT

By Major F.I. Eglin, Air Corps

THE Command, Staff, and Logistics department consists of five sections, each of which is charged with presenting courses as indicated below:

THE MILITARY INTELLIGENCE SECTION

This section presents courses in Military Intelligence, Military Geography, and Maps and Photographs. The scope of these courses, in brief, follows:

Military Intelligence.- The course is designed to acquaint the class with the process by means of which information of the enemy is developed into military intelligence, the organization by means of which this is accomplished, and the principles governing the employment of military intelligence agencies, both air and ground.

Military Geography. - This subject includes physical geography, human geography, political geography, and economic geography. It consists of much more than a mere collection of data - it is an analysis of the latest accurate data made from a military viewpoint. The course is presented in lecture form based on selected areas.

Maps and Photographs.- This course covers the reading and use of military maps, and the making and use of aerial photographs, including mosaics.

THE COMBAT ORDERS SECTION

The Combat Orders Section presents courses in the following subjects:

Combat Orders.- The course is designed to acquaint the class with the several classes of combat orders, stressing particularly field orders. The instruction covers the orders of both air and ground units, with special attention to expression, technique, form and sequence.

Solution of Problems.- This subject covers the logical consideration of all factors affecting a specific situation and the methods of arriving at correct decisions in such situations; in short, the estimate of the situation. The course also includes instruction in the mechanism and methods of solving problems.

Mobilization.- The subject is presented in lecture form and concerns mobilization plans of the War Department.

THE LOGISTICS SECTION

Logistics is that branch of the art of war which determines the details necessary for the movement and supply of troops throughout all phases of military operations. The subject is presented in two courses, Air Logistics and Ground Logistics.

Air Logistics. - This course covers the organization of logistical agencies serving the air units, and the principles and methods governing the operation of these agencies.

Ground Logistics. This course presents a general picture of the territorial organization of a theatre of war, and includes a detailed study of the supply and movement of the infantry division.

THE STAFF DUTIES SECTION

Staff Duties.- This course is concerned with command and staff principles, functions, and organization, with particular reference to staff teamwork and the preparation of the common staff papers, including journals, reports, staff maps, and objective folders. The course covers the staffs of both the air and ground units.

SIGNAL COMMUNICATIONS

Signal Communications.- While communications are most essential to the operation of all combat units, they are auxiliary and not peculiar to any specific ground arm or class of aviation. The subject is therefore given a special section in this department.

The objective of the communications course is, most definitely, not to train communications officers, that being one of the functions of the Air Corps Technical School, Chanute Field. In this course the adaption of each class of communications to the operations of the combat units is developed and methods of solving communications problems met with in practical operations are suggested. The course covers the communications of both the ground and air units.

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ASSIGNMENT OF GRADUATES OF THE A.C.T.S.

Special Orders of the War Department, recently issued, assign the following-named Air Corps officers, upon the completion of their present course of instruction at the Air Corps Tactical School, to duty at stations indicated:

Captain John M. Clark to the San Antonio Air Depot, Texas.

Captain Cortlandt S. Johnson to Middle River, Md., as Air Corps Representative at the aircraft factory of the Glenn L. Martin Company.

Captain Leland W. Miller to the Office of the Chief of the Air Corps, Washington.

Captain Aaron E. Jones to Langley Field, Va., with GHQ Air Force.

Captain Donald D. FitzGerald to Bolling Field, D.C.

Captain Merrill D. Mann to Chicago, Ill., for duty with organized reserves, 6th Corps Area.

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In devoting this issue to the Air Corps Tactical School, we express our appreciation to the Commandant thereof and to the other officers who have cooperated so whole-heartedly to make this particular issue possible. The cover page and the illustrated insert sheets were prepared by the photographic personnel, Maxwell Field.

THE STUDENT CLASS AT THE TACTICAL SCHOOL

Graduation exercises will be held on Tuesday morning, June 2, 1936. The following program has been tentatively arranged:

Invocation
Address to the Graduating Class
Presentation of Diplomas
Benediction

The following officers are members of the class of 1935-1936:

Lieutenant-Colonel

Hoffman, Edward L.

Majors

Davidson, Joseph H.
Eaker, Ira C.
Kepner, William E.
Lindsey, Malcolm F., Inf.
McCatty, Kenneth, C.A.C.
McClelland, Harold M.
Hodge, John R., Inf.
Hoppough, Clay I., S.C.
O'Neill, Raymond E.
Sorenson, Edgar P.

Captains

Bayley, Eugene B.
Beery, Levi L.
Bivins, Hugh A.
Caldwell, Charles H.
Cannon, John F.
Carr, Lawrence J.
Chidlaw, Benj. W.
Clark, Harold L.
Clark, John M.
Connell, Samuel M.
Crawford, Alden R.
Cumberpatch, Jas. T.
Dayton, Lewis A.
Dulligan, John H.
Duncan, Claude E.
Ely, Louis B., F.A.
FitzGerald, Donald D.
Ferguson, Homer W.
Foster, Thad V.
Gaffney, Dale V.
Glenn, Albert F.
Halverson, Harry A.
Hoag, Earl S.
Horn, Charles A.
Johnson, Cortlandt S.
Jones, Aaron E.
Kellogg, Crawford M., CWS
Langmead, Edmund C.
Longfellow, Newton
Lowe, Thomas M.
Lyon, Alfred J.
Magee, Richard H.
Mann, Merrill D.
Maughan, Russell L.
Mayhue, Don W.
McGinnis, Harold A.
McPike, George V.
Miller, Leland W.
Moon, Ernest S.
Morris, William C.
Old, William D.
Parker, James E.
Phillips, Donald B.
Powers, Edward M.
Schneider, Max F.
Sharon, Leon E.
Shea, Augustine F.
Snavely, Ralph A.
Thomas, Charles E., Jr.
Tooher, Bernard J.
Twining, Nathan F.
Wolfe, Kenneth B.

First Lieutenants

Fair, Ford L.
Ferris, Carlisle I.
Quesada, Elwood R.

Navy Officer

Lieut. Bennett W. Wright

Marine Corps Officers

Captain Thomas J. Cushman
Captain William L. McKittrick
Captain Stanley E. Ridderhof

NOTE: Above are Air Corps officers except as otherwise noted.

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Grading and construction work on the new Bolling Field is progressing rapidly with two shifts of W.P.A. workers on schedules of six hours per day each. The outlines of runways are becoming visible, and leveling and grading operations continue steadily.

The date of the completion of the project has not been predicted.

STAFF AND FACULTY OF AIR CORPS TACTICAL SCHOOL

The Staff and Faculty of the Air Corps Tactical School consist of the following officers

Colonel Arthur G. Fisher, A.C., Commandant.
Lieut.-Colonel Herbert A. Dargue, A.C., Assistant Commandant.
Captain Julian B. Haddon, A.C., Secretary.

Department of Air Tactics and Strategy

Sections

Air Force: Chief: Major R.M. Webster
Inst.: Lieut. H.S. Hansell
Attack: Chief: Major L.A. Smith
Inst.: Major E.C. Kiel
Bombardment: Chief: Major Odas Moon
Inst.: Lieut. L.S. Kuter
Observation: Chief: Major F.W. Evans
Inst.: Major B.E. Gates
Pursuit: Chief: Major C.L. Chennault
Naval Operations: Lieut.-Col. H.A. Dargue

Department of Command, Staff and Logistics
Director: Major F.I. Eglin, Air Corps

Sections

Combat Orders: Chief: Major F.I. Eglin
Signal Communications: Chief: Maj. Grandison Gardner
Logistics: Chief: Maj. A.W. Martenstein
Staff Duties: Chief: Major F.I. Eglin

Department of Flying
Director: Major L.A. Smith, Air Corps

Sections

Practical Flying: Chief: Major L.A. Smith
Air Navigation: Chief: Maj. Grandison Gardner

Department of Ground Tactics
Director: Lieut.-Colonel W.N. Porter, C.W.S.

Sections

Antiaircraft: Chief: Major B.F. Harmon, CAC.
Cavalry: Chief: Major R.L. Creed, Cav.
Chemical Warfare: Chief: Lt.-Col. W.N. Porter, CWS.
Combined Arms: Chief: Lt.-Col. W.N. Porter, CWS.
Inst.: Major H.H. Ristine, F.A.
Inst.: Major R.L. Creed, Cav.
Inst.: Major B.F. Harmon, CAC.
Inst.: Major L.B. Glasgow, Inf.
Field Artillery: Chief: Major H.H. Ristine, F.A.
Infantry: Chief: Major L.B. Glasgow, Inf.

Extension Course

Extension Course: Chief: Major John I. Moore

NOTE: Members of Staff and Faculty are Air Corps officers except as noted.

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NEW LINK TRAINER AT BOLLING FIELD

Final installation and adjustments of a new Link Trainer at Bolling Field, D.C., have been completed recently, and the apparatus is operating in a highly satisfactory manner. The use of the Trainer is expected to reduce materially the amount of time necessary for completion of the prescribed course of instrument flying training at that station.

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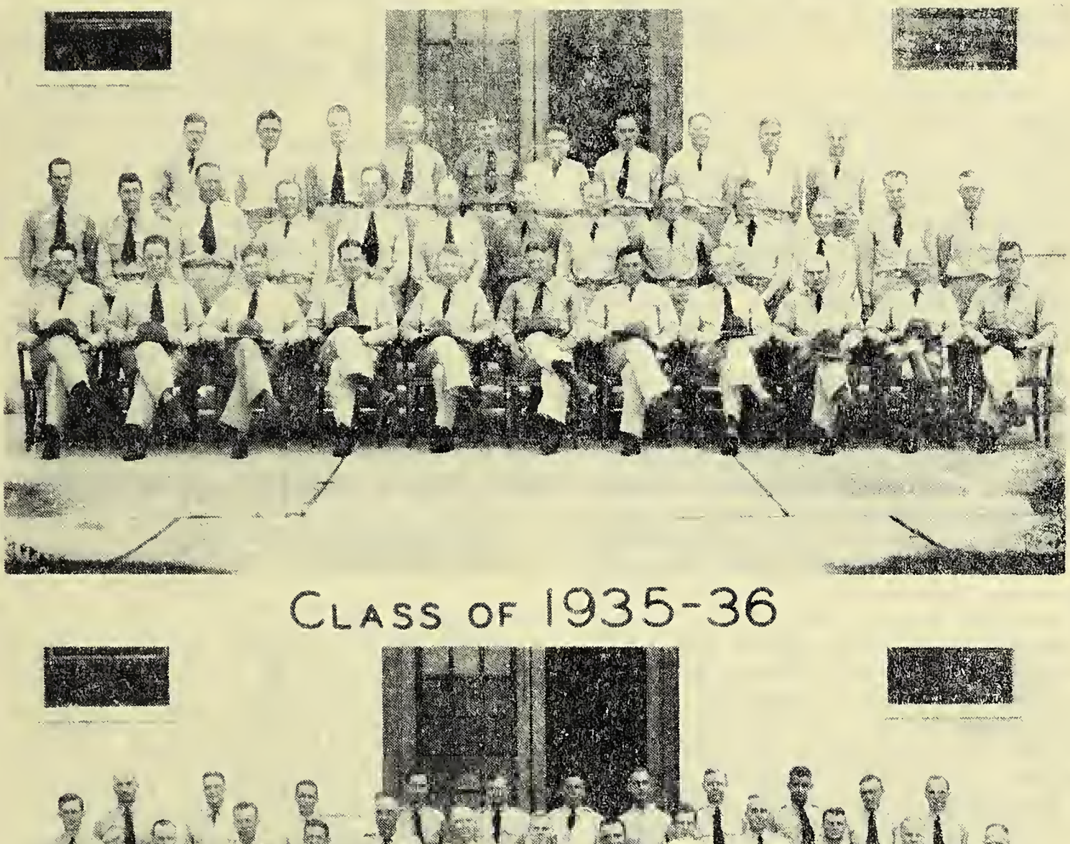
Capt. Thomas M. Lowe, A.C., is assigned to duty with the Organized Reserves, 5th Corps Area, at Columbus, O., upon completion of his course of instruction at the Air Corps Tactical School.

THE AIR CORPS TACTICAL SCHOOL



CLASS OF 1935-36

A Chemical Warfare Officer at the ACTS

(Continued from Page 12).

I have ever served on are here to be taken advantage of. The arrangement of a mutually supported nurses' fund by the Post Hospital is most satisfactory. The School building is relatively new and completely equipped. After seeing this School and the new Infantry School building at Fort Benning, it seems that the Chemical School could well afford to receive more liberal treatment. From a personal viewpoint, the instruction in all subjects has been of much benefit to me throughout the course. Some subjects are, perhaps. too elementary for certain officers. However, officers qualified by previous opportunities, are excused on proper request. I feel that I now have a much broader military viewpoint, which is one of the primary reasons for requesting the detail.

The A.C.T.S. Library should be mentioned as a very valuable and pleasant addition to the facilities for study and outside reading.

It seems to me that the size of the class is such as to make it very hard for the instructor. I can suggest no remedy for this situation other than possibly more instructors and smaller sections. The classes that gave the most trouble at M.I.T. were the large lecture classes in military science in the second year. These classes ran about 100 to 120 men. Anything that I might say in regard to instruction should be accepted with reservations,as my experience is only as student in my own branch school. Writing a good textbook is a very difficult job. Some of the texts of the Chemical School are verbose. Some of the texts used here have that tendency.

Among the many interesting subjects, the flying periods appeal to me most. Before coming here I had about 12 hours total flying time, hence my interest in this subject. Some of the practical difficulties connected with air navigation, bombing from high altitude, and proper observation training are brought home by these periods. The care required in formation flying under favorable conditions is amply illustrated. Low flying attack missions give me something to think about on account of the chemicals as an auxiliary weapon. All the Air Corps officers of the class that I have flown with are excellent pilots, and I have the greatest confidence in them.

I have been impressed while here with the necessity of all branches pulling together and the elimination of useless dissension within and between branches. Over-exaggeration and understatement are apparently about equally dangerous. It has been a great privilege to have been permitted to come here and attend the A.C.T.S. course. On account of the importance of future cooperation between the Air Corps and the Chemical Service, more Chemical officers should have the advantage of the training at the Air Corps Tactical School.

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GUNNERY PRACTICE FOR MAXWELL FIELD PERSONNEL

Valpariso, Fla., which is about 150 miles south from Maxwell Field, is the site of the bombing and gunnery range used by the personnel stationed at that field. Valpariso is on the Choctawwhatchee Bay, which is an arm of the Gulf of Mexico, and Maxwell Field officers held their first practice there the week ends of March 28th and 29th and April 4th and 5th. During theseperiods,all members of the student body of the Air Corps Tactical School,including those from the ground arms, had gunnery practice firing at tow targets.

Touching on the firing conducted the latter part of March, the Valpariso weekly newspaper stated:

"Above the same trails and over the same streams along which fighting forces of the United States once pushed and pulled supplies and doggedly cut their way a few miles each day to battle the British at New Orleans, a new fighting force on wings last Saturday flew, swooped, banked, dove and with staccato firing gave battle to an imaginary foe in practice defense of the same territory that General Jackson's frontier soldiers once saved to the nation.

To the people of Valpariso and environs the maneuvers of a group of fighting planes over Choctawwhatchee Bay and the Gulf was a source of great interest and wonder. In army parlance, it was an occasion of tow target practice and machine gun firing at the Valpariso Gunnery Base by officers on duty with the U.S. Air Corps Tactical School at Maxwell Field, Ala. * * Plans and hopes of both the people of the Bay Country and the Maxwell Field Air Corps staff materialized at 7:30 Saturday morning when pursuit planes, attack planes, bombers, observation and transport planes, thirty-six in all,swooped down over the Valpariso Airport and landed for a day of machine firing practice with tow targets. Forty-five flying officers headed by Col. A.L. Fisher, commanding Maxwell Field, were present, forty of them members of the Air Corps Tactical School. Of the 110 enlisted men at the field, fifty were brought down by transport and bomber to assist in the day's work.

The maneuvers went off like clockwork. Every hour, starting at 9:30 in the morning, a new group of officers took to the air testing their skill with machine guns in diving and firing at the tow targets jumping here and there behind the tow planes. The Gulf coast beyond the Pass was divided into eight mile sectors, and each flight took a different part of the coast. To local residents the practice was of endless interest; likewise the many planes drawn up in orderly rows, propellers front, at the airport. Hundreds gathered Saturday and Sunday to watch the flying and examine the ships. * * "

NATIONAL DEFENSE DEMONSTRATION AT SPOKANE

By Lieut. Ellsworth C. French

VISITING Air Corps personnel attending the National Defense Demonstration at Felts Field, Spokane, Wash., May 29. 30 and 31, won't have to pay any hotel bills.

This "unpleasant feature" about extended cross-country flights was shoved into the discard by the 41st Division Aviation, Washington National Guard, joint sponsor of the Demonstration, when plans were completed for the use of a brick building adjoining the airport for a barracks.

Major Ralph P. Cousins, on duty in the National Guard Bureau, Washington, has already advised National Guard Observation Squadrons that a blanket cross-country authority has been authorized for flights to the Spokane Demonstration, in which 1400 troops of the Regular Army, National Guard and Reserve Corps Infantry, Artillery and Air Corps will participate.

Quarters for the visiting pilots are situated less than one block from the 41st Division Aviation administration building and spacious hangar, where all necessary facilities are available.

The plans include regular scheduled automobile transportation from Felts Field to Spokane, and entertainment for the visitors.

"It is pleasing to announce that we have eliminated the hotel bill for visiting pilots," said Lieut. H.R. Wallace, in charge of the aeronautical features of the demonstration. "We want to make the visit of our guests as pleasant as possible, and also as inexpensive as possible. There will be a regular mess at which all military personnel will be eligible, and there are other eating accommodations available on Felts Field. Friday, May 29th, the first day of the demonstration, will be largely devoted to aviation, and we desire all visiting pilots to be present that day and remain throughout the demonstration."

As the military defense demonstration will hinge largely around actual field training conditions, troops other than the visitors will be housed in "pup tents."

Early replies to invitations extended to National Guard Squadrons assure representation from the Pennsylvania, Tennessee and Maryland squadrons. Others indicated a willingness to attend, but asked about housing conditions while in Spokane.

"The authority given by Major Cousins for cross-country flights to Spokane provides an exceptional opportunity for National Guard Squadrons," said Major Robin A. Day, Instructor and Commander of the 41st Division Aviation. "Few, if any, National Guard squadrons have visited the Northwest country, which is occupying so much attention in the scheme of National Defense today.

"No airway in the country is better equipped than the Northern Transcontinental Airway, over which the Northwest Airlines operates a daily double round trip schedule between Seattle and Chicago. And there is no more interesting country to fly over than that along the Northern Transcontinental Airway. Pilots making the trip will agree that it is an excellent training flight."

Last year, Colonel Ralph Royce, commander of the First Pursuit Group, Selfridge Field, Mich., had his pilots ferrying Pursuit airplanes from the Boeing factory at Seattle, fly at least one way over the Northern Transcontinental Airway.

During the day before and the first day of the demonstration, motor caravans will be moving into Spokane from all parts of the Inland Empire. In addition to the permanent resident Regular Army and National Guard troops in Spokane, troops will come from Coeur d'Alene, Idaho; Walla Walla, Prosser, Yakima, Pullman and Wenatchee, Wash.

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CADET KRAMER LOSES LIFE IN AIRPLANE CRASH

Flying Cadet Charles E. Kramer, a member of the 27th Pursuit Squadron, Selfridge Field, Mich., was instantly killed at 11:15 a.m., March 30th, when the P-26 airplane he was piloting crashed about two miles northwest of New Baltimore, Mich. He was engaged in acrobatics on a local training mission when the accident occurred. Upon completion of the course at the Air Corps Training Center, San Antonio, Texas, Cadet Kramer was transferred to Selfridge Field for duty, and arrived March 9, 1936. His remains were transferred to Fulton, Ky., March 31st, for interment, Flying Cadet Charles E. Marion being the escort. He was the son of Mr. and Mrs. Thomas J. Kramer, of Fulton, Ky.

The Air Corps extends deepest sympathy to his bereaved family.

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Mrs. Franklin D. Roosevelt, accompanied by her two small grandchildren, was a recent visitor at Bolling Field, D.C. Major E.L. Eubanks, Air Corps, piloting the GHQ flagship, met Mrs. Roosevelt at the field and flew the party to Langley Field, Va.

Mrs. Roosevelt then proceeded to Newport News and christened the new aircraft carrier "Yorktown." On the following day, Major Eubanks flew Mrs. Roosevelt and party back to Bolling Field.

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ADDITIONAL DATA ON THE WINTER TEST MANEUVERS

SINCE the publication in the previous issue of the News Letter of an article on the Winter Test Maneuvers, submitted by the correspondent from Barksdale Field, La., additional data on these maneuvers was received from the Langley Field correspondent, excerpts from which are set forth below.

More than 300 officers and enlisted men from Barksdale, Langley, Mitchel and Selfridge Fields were engaged in conducting cold weather tests of clothing and equipment in the New England area, under the command of the Commanding Officer of the 8th Pursuit Group, GHQ Air Force.

Concentration of all units at Mitchel Field, N.Y., began on January 26th, when the Group Commander and members of his staff arrived in Pursuit type airplanes, followed by 12 members of Group Headquarters Detachment in a C-4A Transport. Langley Field furnished ten B-10B Bombers for the Maneuvers; Selfridge Field, P-26A's; and the Transport planes comprised 2 C-4A's, 3 C-14's, 2 C-24's, and 1 C-27. A B-6A was also used as a transport. On the return trip it was necessary to substitute a C-4A for the C-27, due to the inability of the latter plane to take off from Olmstead Field at Middletown, Pa., because of snow on the runways. In addition to the transportation of personnel, supplies and equipment were ferried by transports. The proper routing of the limited number of transports made available constituted a major problem.

By February 1st, all units had moved into the tactical position assigned them for the first phase of the Maneuvers - the Bombardment Squadron at Concord, N.H., and the Attack and Pursuit Squadrons at Mitchel Field.

The Bombardment Squadron then made attacks on the Mitchel Field area, defended by Attack and Pursuit, with the use of the method of interception developed during the GHQ Air Force Concentration AF Plan B, which provided that a ground radio warning net be thrown around an area to warn the defending forces of arrival of enemy aircraft.

Completing the first phase on February 7th, The Command Post moved to Concord, followed by the Attack Squadron and members of Group Headquarters. The Pursuit Squadron, based at Burlington, Vt., defended that area against attack by the Bombardment and Attack Squadrons.

Although the tactical situation was made secondary to the testing of clothing and equipment, the report, showing a total of 437 tactical missions accomplished in 1100 hours of flying over approximately 150,000 miles, gives evidence of the success of the tests. These 1100 hours, added to 1500 hours of non-tactical flying (including transport movement, movement of units getting into position for tactical operations and staff movements) total 2600 hours flown over approximately 300,000 miles. The absence of engine failure reports during the exercises is highly complimentary to the type of equipment now in use, especially considering that tests were being conducted on grades of oil and other engine accessories.

In the 100 transport flights no accidents of any description were encountered, despite that landings and take-offs were made from ice and snow-covered runways by pilots unfamiliar with cold weather operation. This no-accident record hung up by the pilots and their crew chiefs is deserving of the highest praise.

In the 2600 hours of flying there were three accidents, two in Pursuit planes being previously mentioned. The crash of a B-10 was due to the landing gear failing to lower while in flight. Pilots at Concord had been previously instructed that, in case of failure of landing gears to operate, to proceed to Mitchel Field and there attempt a landing. Upon coming in to make a landing at Concord, Lieut. T.J. Cunningham, pilot of the B-10, attempted to lower the wheels and, not being able to do so, radioed his difficulty to the ground station and then proceeded to Mitchel Field, where he accomplished a safe landing on one wheel which he succeeded in lowering. Very little damage was done, due to the sturdy construction of that type plane.

Among the 130 items of clothing and equipment tested were skis for P-26A and A-12 planes; special oil for machine guns; tents, with sleeping bags and pneumatic mattresses; flying clothing, including shoes, gloves, vests, jackets, helmets and trousers; engine heaters, covers and fire pots of varying designs; heaters for cabins of transport planes; repair tents for making adjustments and inspections; improved priming systems; engine starting accessories; portable night lighting equipment; special grades of engine oils and lubricants, and Snogo plow for clearing snow from runways.

Bomb release mechanism, it was determined, do not function as efficiently as now constructed. On the other hand, machine gun operation was found to be satisfactory when using a specially prepared oil, but it was definitely determined that more personnel is necessary to care for the guns under cold weather operation than in warmer climates.

Conclusions were reached that heated cockpits are desirable for winter operation, due to the restrictions imposed on the pilot when wearing heavy clothing. Three methods of heating airplane engines that had been standing in the open and exposed to the weather appeared feasible. One involved the use of steam heat; the second, the utilization of the gases from the engine exhaust; and, third, the use of electrical equipment. If steam heating is used there must be available hangars in which to store planes while not in use, in order to prevent freezing in the system. Utilization of the exhaust gases is considered impracticable in planes of the Pursuit type. The use of electrical equipment would require another generator or battery, thus adding weight, reducing speed, maneuverability and a further reduction in carrying capacity for military loads.

Primarily, the New England Tests involved weather. The maneuvers further established the value of a reliable weather service. The central station, located at Concord, was able not only to make predictions of the next day's conditions and assist in mapping out tactical flight missions in advance, but was also able to give and receive reports of changing conditions by radio at all times when planes were in the air.

The tests showed that radio communications can be conducted between ground and air from ship to ship in winter weather. While radio communications were regarded as satisfactory, improved equipment, particularly ground station equipment, would increase efficiency.

Touching on the rescue by a Coast Guard cutter of seven C.C.C. boys adrift on an ice floe in Cape Cod Bay, which incident was mentioned in a previous issue of the News Letter, the News Letter Correspondent states that Major Barney M. Giles, commanding the detachment of the 20th Squadron at Concord, located a tiny dot on the ice which he was soon able to identify as the boys, and then proceeded to circle the floe. He added that, aside from the humanitarian aspect of the rescue, a tactical point was proven when the tiny dot - the seven boys - was located in a remarkably short time and its position radioed to shore parties and Coast Guardsmen. Enemy carriers and aridromes could be located with the same speed and accuracy.

The removal of snow from the airports, and especially from the runways, presented one of the major problems of the exercises. A "Snogo" plow was shipped from Iowa to Concord. Due to the cooperation of the New Hampshire State Highway Department in making their equipment available at all times, and the lack of heavy snow falls, it was sent to Burlington, Vt., where it performed satisfactorily.

It was found that when operating from bases such as those at Concord and Burlington, where snow removal equipment was available, the use of skis and chains on airplanes was unnecessary, although several planes were equipped with them. Steel-studded non-skid tires tested in the maneuvers were delivered on seven days' notice. This was regarded a remarkable feat, considering that five days is the normal time allowed for the manufacture of a regular tire.

That the tests were considered important to commercial aviation was evident by the presence of many representatives of manufacturers of aircraft parts and accessories to observe the operation of equipment subjected to cold weather operations. The cooperation of these various representatives in aiding mechanics to make repairs and changes in equipment was of great value to successful operation.

A representative of the Aeronautics Branch of the U.S. Navy attended the exercises as an observer. While the tactical problems confronting the Navy are of a different nature, many of the features of the cold weather test, such as the type of clothing worn by the pilots and the grades of oil and other lubricants used in sub-zero temperatures, were considered of value.

It will take two months to complete the records of the tests undertaken during the exercises. Some of the conclusions may be changed as a result of further study and evaluation, but enough has been learned to convince officers that the New England Winter Maneuvers may have been productive of more conclusive results than any other tests ever conducted. For this the Group Commander has expressed official appreciation to the officers and men of his Group and particularly to the people of the New England Area and their public representatives for the kind cooperation which made the findings possible.

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LIGHTER-THAN-AIR ACTIVITIES

Lieut.-Colonel Frank M. Kennedy, Commanding Officer of Scott Field, Belleville, Ill., flew the TC-14 airship on March 25th, down the Ohio River to make a preliminary survey for the Red Cross of the high water conditions. Colonel Kennedy found the Illinois side of the river to be dry, while the Kentucky lowlands were already under water. At that time the flood crest from the upper Ohio River had not reached the Shawneetown area.

The TC-11 airship, which is being erected by the Ninth Airship Squadron, Scott Field, is a helium-inflated, non-rigid type of 200,600 cubic foot capacity, equipped with an enclosed car. This airship is smaller than the TC-14 and is externally rigged.

The 21st Airship Group Headquarters Rad Air Alert 24-hour watch began at 10:00 a.m., March 30th, guarding 3105 kilocycles

Biographies

LIEUT.-COLONEL JOHN B. BROOKS, AIR CORPS

One of the early Army fliers, now serving a tour of duty as a member of the War Department General Staff in Washington, is Lieut.-Colonel John B. Brooks, Air Corps, who has been in the flying game since 1915, and received his flying training in that year at the Signal Corps Aviation School at San Diego, Calif.

Col. Brooks was born in New York on June 8, 1891. He is a graduate of the St. John's School, Manlius, New York. Appointed a second lieutenant from civil life, November 30, 1912, he was assigned to the 10th Cavalry, March 14, 1913, and joined his regiment at Fort Ethan Allen, Vermont. In the following December, he moved with his regiment for station at Fort Huachuca, Arizona, for border patrol duty. Later he served at several other stations along the Mexican border.

Attached to the Aviation Section, Signal Corps, October 22, 1915, he completed his flying training at San Diego and received the rating of Junior Military Aviator on June 7, 1916.

Col. Brooks joined General Pershing's punitive expedition into Mexico, served during the operations of the American troops in that country and at the base of the 1st Aero Squadron at Columbus, New Mexico, from June 14, 1916, to January 20, 1917. On temporary duty at the Aviation School at San Diego until March 3, 1917, he then proceeded for duty in Hawaii, conducting to that insular possession the 6th Aero Squadron. He served as Supply Officer of this organization to July 1, 1917, and from that date until he departed for the United States, November 20, 1917, he served also as Department Aeronautical Officer as well as Commanding Officer of this Squadron.

Following temporary duty of several months' duration in the Office of the Chief Signal Officer in Washington, Col. Brooks was ordered, January 2, 1918, to duty at Call Field, Wichita Falls, Texas, organizing and commanding the flying school at that field. On April 5, 1918, he was transferred to Scott Field, Ill., which functioned at that time as a school for aviation mechanics. Col. Brooks organized this station into a flying field and remained there until June 11, when serious injuries received in an airplane accident kept him on sick report for almost two months. From August 3 to November 3, 1918, he was on duty at Henry J. Damm Field, Babylon, L.I., New York, where he was an observer of the Gosport System of flying instruction. He then reported to Brooks Field, San Antonio, Texas, where he commanded the School for Flying Instructors organized at that field.

On February 10, 1919, Col. Brooks assumed command of Barron Field, Everman, Texas, but remained on this duty for only a brief period, he again proceeding for service in the Hawaiian Department on April 3, 1919. He was on duty as Air Officer of the Hawaiian Department to June 12, 1919, and as Assistant to the Department Air Officer to March 3, 1921. On several occasions he served temporarily as Commanding Officer of Luke Field. He held the position of Executive Officer, Hawaiian General Area Depot, to June 20, 1921, and that of Commanding Officer thereof for a month. He assumed command of Luke Field on July 21st and served in this capacity for one year, following which he was assigned to duty as Air Officer of the Third Corps Area, Baltimore, Md.

In October, 1923, Col. Brooks was assigned as a student at the Air Service Tactical School at Langley Field, Va., and, upon his graduation therefrom in June of the following year, and from the Command and General Staff School, Fort Leavenworth, Kansas, in June, 1925, he was assigned to station at Mitchel Field, N.Y., where he served as Post Operations Officer, in addition to performing various other duties.

A student at the Army War College, Washington, from August, 1926, to June, 1927, Col. Brooks, following his graduation, was detailed as a member of the War Department General Staff, being assigned to duty in the Air Section Training Branch, G-3 Division. On May 7, 1930, he was transferred to the Philippines, assuming command of Clark Field and the Third Pursuit Squadron. Transferred to Camp Nichols, Rizal, P.I., May 15, 1931, he assumed command of this post and of the 4th Composite Group, and remained on this duty until July 27, 1933, when he was again detailed as a member of the War Department General Staff, Washington, and assigned to the G-3 Division.

At this writing, Col. Brooks has exceeded the 2500-hour mark in total flying time.

Col. Brooks held the rank of 2nd Lt. to June 7, 1916; 1st Lieut. to May 15, 1917; Captain to June 9, 1918; Major, National Army, to February 9, 1920; Major, Air Service, from July 1, 1920, to August 1, 1935, when he was promoted to Lieutenant-Colonel.

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MAJOR MICHAEL F. DAVIS, AIR CORPS

Major Michael F. Davis, one of a comparatively small number of officers in the Air Corps holding all four Air Corps flying ratings, those of Airplane Pilot, Airship Pilot, Airplane Observer and Balloon Observer, was born at New Richmond, Ohio, March 25, 1894. Graduating from the United States Military Academy in June, 1915, he was commissioned a second lieutenant and assigned to duty with the 6th Infantry. On July 1, 1916, he was promoted to 1st Lieutenant; on May 15, 1917, to Captain, and on June 18, 1917, to Major, J.M.A.

Assigned in September, 1916, to the Aviation Section, Signal Corps, for flying duty, Major Davis received his flying training at the Signal Corps Aviation School at San Diego, Calif. He was rated "Junior Military Aviator" on June 18, 1917, which rating was subsequently changed to that of "Airplane Pilot." Prior to reporting at Kelly Field, Texas, November 10, 1917, for duty with the Flying Department, he served with the 1st Aero Squadron. For several weeks he was in charge of the advanced solo stage of flying instruction and, on December 6th, he assumed command of the 50th Aero Squadron, with which organization he sailed for overseas duty on January 9, 1918.

For several months, Major Davis attended flying and aerial gunnery schools in England and Scotland. Between April 27 and May 11, 1918, he was on duty as ferry pilot, flying airplanes from England to France. Between May 12 and June 28, 1918, he served as a flying officer with the 84th and 40th Squadrons of the British Royal Air Force, following which he was assigned to duty at the Third Aviation Instruction Center in France, where he served until the latter part of October, commanding the 33rd Aero Squadron and Field No. 9 until September 2, 1918; the 13th Aero Squadron and Field No. 8 until September 24th, and serving on the School Staff of the Third Aviation Instruction Center to October 29th, when he was assigned to duty at the Aerial Gunnery School, St. Jean de Monts, France. Completing his course at this school on November 15th, he was assigned to the command of the 4th Pursuit Group, 2nd Army, Toul, France.

On May 12, 1919, he reported for duty as student at the School of Artillery Studies at Treves, Germany.

Returning to the United States in July, 1919, Major Davis was assigned to duty as Assistant Chief of Training, Office of the Director of Air Service, Washington, D.C. Serious injuries received in an airplane accident at Bustleton, Pa., confined him to Walter Reed General Hospital for some 15 months.

In January, 1921, Major Davis was ordered to duty at Ross Field, Arcadia, Fla., where he took the course of instruction at the Balloon School, qualifying as a Balloon Observer. He also served as Executive Officer of this School and, temporarily, as Commanding Officer.

Assigned on April 1, 1922, with the Organized Reserves of the 9th Corps Area, San Francisco, Calif., he served on this duty until the latter part of August, 1924, and at various periods performed the function of Air Officer of the 9th Corps Area. At Scott Field, Belleville, Ill., his next station, Major Davis was a student at the Balloon and Airship School, graduating in June, 1925, and receiving the rating of "Airship Pilot." For the next four years, his duties were associated with school activities, he being a student at the Air Corps Tactical School at Langley Field, Va., from September, 1925, to August, 1926; at the Command and General Staff School, Fort Leavenworth, Kansas, from August, 1926, to August, 1927, and thereafter up to June, 1929, serving as an instructor at the Air Corps Tactical School. For the next two years he was on duty in the Schools Section, Training and Operations Division, Office of the Chief of the Air Corps, Washington.

Transferred to Crissy Field, Presidio of San Francisco, Calif., in July, 1931, Major Davis served as Executive Officer until November 21, 1931, and as Commanding Officer of the post and of the 91st Observation Squadron until March 23, 1933, when he was transferred to the Hawaiian Department, where he performed the duties of Wing Operations, Training and Communications Officer of the 18th Composite Wing at Fort Shafter, T.H.

Upon the completion of his tour of duty in Hawaii, Major Davis was transferred to Washington, D.C., and assigned on April 1, 1935, to his present position as Assistant Executive, Office of the Chief of the Air Corps.

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ATTACK TRAINING AT LANGLEY FIELD

Contamination of airdromes has been one of the high lights in recent training activities of the 37th Attack Squadron at Langley Field, Va. Results obtained on panels arranged in areas approximately 300 yards long by 100 yards wide proved satisfactory and indicated the extent of possible contamination by a flight of Attack airplanes on exposed material and personnel. These panels were set out on strange airdromes and the attacking flight was allowed only one attack. Locating and spraying panels under these conditions made these problems both interesting and instructive.

One chemical tank, type B-1, with 10 gallons of lime water was used by each airplane on each attack. The mission was performed by one element of three planes.

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Capt. Oscar L. Rogers, serving a detail with the Organized Reserves, 5th Corps Area, Columbus, Ohio, has been ordered to Chanute Field, Rantoul, Ill., for duty.

QUESTIONS AND ANSWERS

It is proposed to carry in the News Letter a column under the above caption for such time as appears desirable to reply to a number of questions which have been propounded to the Office of the Chief of the Air Corps. Several officers have suggested to the Office, Chief of the Air Corps, and to individual Air Corps officers that, in order to secure uniformity, questions which arise rather generally in the minds of Air Corps personnel, and of others interested in military aviation, be answered in a way that meets with the approval of the Chief of the Air Corps. This procedure will tend to crystallize opinion upon these points within the Air Corps and to enable those to whom such questions are propounded to give answers which will conform to approved indoctrination.

Q. 1. What is the basic policy of the United States with respect to the organization and control of its military aviation?

A. 1. U.S. military aviation is primarily organized into two principal components, one as a branch of the United States Army and the other as an arm of the United States Fleet. These components are controlled by the War Department and the Navy Department, respectively.

Q. 2. Would the placing of military aviation under a Department of Air be preferable to the present set-up in the United States?

A. 2. Both the War Department and the Navy Department are definitely opposed to this. Under our form of government it could not be done unless an overwhelming majority of the personnel of the air components of both the Army and the Navy advocates it. The coordination of three national defense agencies would be extremely difficult. The present Chief of the Air Corps is opposed to a Department of Air.

Q. 3. What is the organization and purpose of the G.H.Q. Air Force?

A. 3. It is a grouping under a single commander of all the tactical air units of the Army in the continental United States, except Corps and Army Observation squadrons. The purpose in doing this is to secure uniformity of tactical doctrine, method and training as among the component units of the same class, such as Bombardment, Pursuit, Attack and long-range Observation. The further purpose is to make a single individual responsible for the combat efficiency of the Army Air Force and for the preparation of plans for its employment under various assumed conditions of war employment.

Q. 4. What are the provisions for cooperation between the air units of the Army and Navy?

A. 4. This is covered quite fully in the confidential publication "Joint Action of the Army and Navy," and by the preparation of Joint Army and Navy plans, including plans for Special and Grand Joint Exercises. Consult also letter of the Chief of Staff, dated October 17, 1934, on the subject "Doctrines for the Employment of the GHQ Air Force," marked "For Official Use Only."

Q. 5. What are the strategic areas of the United States from the standpoint of air operations?

A. 5. The Panama Canal Zone, Hawaii, Alaska, and those portions of the continental United States which lie along Great Circle Routes from the territory of the nearest first class powers.

Q. 6. What is the policy of the War Department as to the employment of air units in coast defense?

A. 6. To provide the local observation which will aid in warning of the approach of an enemy and in the direction of artillery fire against such enemy. In case of a major attack against the coast, to employ the GHQ Air Force, or such part of it as may be necessary, to prevent hostile landing on our shores. This subject is covered more fully in the publication "Joint Action of the Army and the Navy."

Q. 7. What is the War Department policy as to the handling of ground anti-aircraft defense in its relationship to air operations?

A. 7. The anti-aircraft Artillery, which comprises the major element of ground anti-aircraft defense, is under the administration of the Coast Artillery Corps. Therefore, cooperation with air units would be in accordance with the plans of the commander of all the forces involved. Assignment of both air units and anti-aircraft Artillery will be in accordance with prepared plans which will provide for the method of control and cooperation. The lack of adequate resources, both in aircraft and anti-aircraft Artillery, has prevented the formulation of any extensive plans for its employment in connection with the defense of localities, except in the cases of the overseas possessions.

Q. 8. What is the War Department's program with reference to the establishment of new Air Corps stations in the continental United States?

A. 8. As a result of the Wilcox legislation (Public No. 263, approved by the President, August 12, 1935), the War Department appointed a Special Committee on Air Bases, comprising representatives of War Plans, G-3 and G-4 Divisions of the General Staff, the Office of the Chief of the Air Corps, and the General Headquarters Air Force, and gave the Committee a directive to make a comprehensive and intensive study of air base requirements and to make recommendations to the Secretary of War designed to carry out the Committee's conclusions. Results of the work of this Committee were directed to be maintained as confidential until released by the Secretary of War. To date this release has not been made.

Q. 9. What is the role of the various classes of aviation comprising the General Headquarters Air Force?

A. 9. The role as governed by the characteristics and performance of the aircraft of each class is concisely stated in Training Regulations 440-15. The role as regards GHQ operations will be controlled by the operating plans prepared for each individual operation. Naturally, these roles will be consistent with the general role for which the aircraft in any class is designed and for which the personnel of such class is trained.

Q. 10. What is responsible for the present shortage of airplanes in the Army Air Corps?

A. 10. The greatest contributing factor is the suspension of airplane procurement, which occurred during the fiscal year 1934, as a result of a request from the Congress to suspend procurement until procurement methods of the Army Air Corps could be adequately investigated. This delay resulted in the loss of practically one year in time in the fabrication of new airplanes. Probably the next factor in importance is the rapid development in the size of airplanes and the amount of their equipment. This, together with a constant effort to increase performance, has resulted in a considerable increase in unit cost of airplanes and motors. Many other factors have contributed, among which may be mentioned the fact that, due to the specialized nature of military aircraft and the limited production of any one type of airplane, manufacturers have been prevented from engaging in volume production.

Q. 11. How may civic bodies, such as Chambers of Commerce, Exchange, Kiwanis, Rotary Clubs, etc., cooperate with the War Department in securing an adequate air defense?

A. 11. By aiding in every manner possible the establishment and improvement of commercial and civil airports throughout the strategic areas of the United States and along transcontinental and connecting airways, in order that ample operating bases and airways facilities may be available to the Air Force in a war emergency. More indirectly they may aid by sponsoring educational programs which will stimulate the interest of the public in commercial and private aviation with a view to providing a larger reservoir of airplanes and trained pilots from which the national defense may draw in the event of an emergency.

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OFFICERS OF OTHER ARMS STUDY AIR TACTICS

Six officers from other branches of the service were detailed for duty at Scott Field, Belleville, Ill., for the period from April 1st to 14th, for the purpose of studying Air Corps tactics. These officers are Major William L. Brown, 1st Lieut. Roscoe C. Huggins and 2nd Lieut. Thomas R. Clarkin of the 6th Infantry at Jefferson Barracks, Mo.; Captain Hamilton P. Ellis and 2nd Lieut. Williard G. Root of the 61st Coast Artillery (Antiaircraft), Fort Sheridan, Ill., and 2nd Lieut. Harold L. Richey, 14th Cavalry, Fort Sheridan, Ill.

Six additional officers from other branches of the service will report to Scott Field for similar training during the period April 16th to 30th, namely: Captain Wayne C. Smith, 2nd Lieuts. Lawrence K. White and Oren E. Hurlburt, of the 6th Infantry, Jefferson Barracks, Mo.; Captains Vincent J. Conrad and George H. Passmore, of the 2nd Infantry, Fort Sheridan, Ill., and Captain Kenneth J. Hoge, 14th Cavalry, Fort Sheridan, Ill.

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POPULAR FLIGHT SURGEON PASSES AWAY

At 2:00 p.m., on Sunday, March 28th, a four-ship V formation roared over Felts Field, Spokane, Washington, the station of the 41st Division Aviation, Washington National Guard.

It was not intended to be that kind of a formation, but the hobby of the late Captain John L. Walter, pilot and squadron flight surgeon, made it that way. The vacancy in the formation was in respect to Captain Walter, whose ashes were flown with ceremonies to the summit of Mount Spokane, where they were spread as the deceased officer requested they be.

A Chicago medical student, Captain Walter joined the 41st Division Aviation about seven years ago. He was an eye, ear, nose and throat specialist. After attending the Flight Surgeon's School, he returned to the Division Aviation, determined to satisfy his ambition to become a pilot.

In this he succeeded, and he was an A.P. and J.A.O. at the time of his death. Dur-

(Continued on page 24).

WAR DEPT. ORDERS AFFECTING AIR CORPS OFFICERS

Changes of Station: To March Field, Calif.: Captain Harold R. Rivers, upon completion of tour of foreign service. Orders assigning him to Bolling Field amended. - Major Walter K. Burgess, Engr. Officer, A.C. Technical School, Chanute Field. Relieved from temporary rank August 10, 1936. - Captain James T. Curry, upon completion of course of instruction at Command and General Staff School, Fort Leavenworth, Kansas. -

To Chanute Field, Ill.: 1st Lieut. Carl W. Carlmark, from Hawaiian Department. - Captain Robert E.L. Choate (1st Lt.) 49th Bomb. Sqdn., Langley Field, Va., for duty as student in Communications Course, A.C. Technical School. Relieved from temporary rank Aug. 18, 1936.- 1st Lieut. Ray W. Clifton (2d Lt.) 5th Bomb. Sqdn., Mitchel Field, N.Y., for duty as student, Airplane Maintenance Engineering - Armament Course, A.C. Technical School. Relieved from temporary rank, August 17, 1936.

To Barksdale Field, La.: Capt. Lewis S. Webster, on duty with Org. Reserves, 6th Corps Area, Chicago, Ill., to duty with GHQ Air Force.

To Materiel Division, Wright Field, Ohio: 1st Lt. James L. Jackson, Air Corps Detachment, Ft. Leavenworth, Kansas. - Capt. Charles W. O'Connor (1st Lt.) Engineer Officer, Air Depot. Relieved from temporary rank upon date of departure from Philippines. - Major Ralph B. Walker (Capt.), San Antonio Air Depot, Duncan Field, Texas. Relieved from temporary rank June 12, 1936.

To the Philippines: 2nd Lieuts. Jerome E. Blair and Stanley J. Donovan, upon completion of course of instruction at Advanced Flying School, Kelly Field, Texas, sailing Oct. 8th.- Major Thomas J. Voss, C.O., 42nd Bomb. Sqdn., Kelly Field, Texas, sailing about June 23rd.

To Randolph Field, Texas: Major Thomas W. Hastey, from Philippines, for duty at the Air Corps Training Center.

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TEMPORARY PROMOTION OF AIR CORPS OFFICERS

To Captain:

1st Lieut. Warren H. Higgins assigned as Flight Commander, 20th Bombardment Squadron, Langley Field, Va., April 12, 1936.

1st Lieut. Richard D. Reeve assigned as Intelligence and Operations Officer, 48th Pursuit Squadron, Chanute Field, Ill., April 6th.

1st Lieut. Millard Lewis assigned as Operations Officer, Station Complement, Hamilton Field, Calif., April 5, 1936.

1st Lieut. Sam W. Cheyney assigned as Flt. Commander, 3rd Pursuit Squadron, Clark Field, P.I., March 31, 1936.

1st Lieut. William M. Morgan assigned as Intelligence and Operations Officer, 3rd Pursuit Squadron, Clark Field, P.I., March 31.

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The following changes in duty assignments of officers holding temporary increased rank have been made:

Major Virgil Hine (Captain) relieved from duty and temporary rank, 95th Attach Squadron, March Field, and to report to Commanding Officer of that field for assignment to duty with GHQ Air Force, March 24, 1936.

Captain Stoyte O. Ross (1st Lt.) from duty with 36th Pursuit Squadron to duty as Flight Commander, 35th Pursuit Squadron, Langley Field, Va., March 29th; retains temporary rank.

Captain Frederic E. Glantzberg (1st Lt.) relieved as Flight Commander, 20th Bomb. Sqdn., Langley Field, and assigned as Intelligence and Operations Officer of that Squadron, March 25th; retains temporary rank.

Captain Jack Greer from duty with GHQ Air Force, Langley Field, to duty with Flight A, 16th Observation Squadron.

1st Lieut. George L. Murray, Barksdale Field, from duty with GHQ Air Force to duty with Station Complement.

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PANAMA-BOUND BOMBERS SERVICED AT DUNCAN FIELD

"A splendid and inspiring sight," says the News Letter Correspondent from the San Antonio Air Depot, "were the nine new Bombers, B-10-B's, as in perfect formation they thundered in and swept down to land at this Depot on the afternoon of March 24th on their ferry flight from Langley Field, Va., to the Panama Canal Department. The personnel of the flight consisted of Lieut.-Colonel Charles B. Oldfield, Flight Commander; Major Barney M. Giles, Deputy Commander; Major M.S. Lawton; Captains A.Y. Smith, J.T. Sprague, A.L. Harvey, J.H. McCormick, E.R.Todd, Wm. C. Bentley, Jr., 1st Lieuts. J.H. Ives, Wm. O. Senter, 2nd Lieut. J.B. Stanley, and a total of 18 enlisted men. Major Samuel E. Brown, M.C., of March Field, Calif., piloted by Captain Wentworth Goss of that field, arrived at the Depot on March 24th to join the Flight as its Flight Surgeon. Captain J.E. Bodle has preceded the Flight as its Advance Officer. The planes were serviced and given minor repairs at this Depot, and took off on the morning of March 26th for the next stop, Brownsville, Tex."

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DAMAGES BY FLOOD KEEP BOLLING FIELD MEN BUSY

While still apparent, the damaging results of the recent flood are rapidly being eradicated by the continuous efforts and overtime work of the post personnel of Bolling Field, D.C. It will probably be days before the unsightly conditions, left by the crude oil, can be entirely removed. There was little, if any, loss to technical property or equipment. However, much of the unmovable electrical installations, as well as central heating plant facilities, were destroyed, and are gradually being put back in shape.

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BOLLING FIELD PERSONNEL IN ARMY DAY PARADE

Personnel of Bolling Field, D.C., took active part on April 6th, in the Army Day Parade held on Constitution Avenue in Washington. A Boeing P-26 airplane, mounted on a flat trailer, trimmed with Air Corps colors and surrounded by a marching squad of soldiers, made an impressive float.

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SPORTSMANSHIP REACHES TOP IN THE ARMY

The following article, written by Pvt. A.D. Carter, 46th School Squadron, Randolph Field, Texas, and published in a recent issue of the San Antonio LIGHT, is reprinted here as being of general interest:

"Offering a sharp contrast in this age of proselyting and professionalism, the soldier-athletes of Fort Sam Houston and the surrounding army flying fields form probably the largest group of real amateur sportsmen in the country.

Uncle Sam's khaki-clad athletes conform to the amateur standard in its highest sense, and far from realizing glory or financial gain from their efforts, sometimes undergo discouraging difficulties in engaging in team sports.

The soldiers enjoy no such luxuries as training tables and cross-country athletic jaunts: they risk serious injury in the bodily-contact games as played in the rough do-or-die army method; and their pay is no more than that of any other soldier.

The nectar of competitive athletics, the cheers of the crowd, is usually denied them. They perform before critical army audiences that are sparing with applause and adept with raspberry. And in the barracks they find no hero-worship.

And still, with no lure but the love of the game and the thrill of competition, literally thousands of San Antonio's soldiery turn out to participate with surprising skill in every sport from ping-pong to parachute jumping.

Which proves something."

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LARGE CONTRACT FOR AIRCRAFT ENGINES

The Secretary of War, Hon. George H. Dern, recently announced the placing of an order with the Pratt and Whitney Aircraft, Division of the United Aircraft Manufacturing Corporation, East Hartford, Conn., for 200 new aircraft engines. The total contract amounted to $1,877,030. The purchase of this quantity of engines at this time parallels the recently awarded contract for new Attack airplanes.

These engines, known as the Pratt and Whitney R-1535-13, are a 14-cylinder air-cooled two-row radial type. The use of the two row radial feature allows a considerable reduction in head area over the single-row radial engine of corresponding horse power. This allows an increase in speed of the airplane in which the engine is installed.

These engines will be used for installation in and spares for 100 new all-metal single-engine Attack airplanes now being constructed by the Northrop Corporation of Inglewood, California.

This engine is a result of the cooperative efforts of the engineering staff of Wright Field, Dayton, Ohio, and the Pratt and Whitney Company engineers, and, in accordance with the established practice of the War Department, have been thoroughly tested by the Air Corps at Wright Field, Dayton, Ohio.

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37TH ATTACK STANDS HIGH IN BOMB DROPPING

The 37th Attack Squadron, Langley Field, Va., claims the title of having dropped the highest number of live bombs (TNT loaded) in the last six months. Demolition bombs, 20-lbs., to the total of 1420 were dropped by this Squadron since September 1st. This figure does not include a large number of 30-lb. fragmentation and 40-lb. chemical bombs which were dropped in conjunction with and demonstrations for the Ordnance Department.

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HAWAIIAN RESERVE OFFICERS INSPECT DEPOT

On a Saturday afternoon, recently, about seventy Reserve officers residing in or near Honolulu, came to Luke Field for one night's encampment. Luke Field and the Hawaiian Air Depot welcomed these officers and were only too glad to have the opportunity of showing them the functions of a tactical squadron and to explain the inner and hidden workings of the Depot. On Sunday morning, Lieuts. Bonner and Henley conducted the officers through the Depot, where they were shown the different stages through which an airplane went while undergoing a major overhaul. Demonstrations by Mr. Miller of flotation equipment and engine tests were also presented. Mr. Coning, himself a Captain in the Reserve and acting in the capacity of civilian assistant to Captain Kane, Depot Supply Officer, gave a talk concerning that department.

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CAPTAIN WALTER

(Continued from Page).

ing recent months he devoted much study to the development of a helmet with radiophones that would be more comfortable and serviceable to pilots. At the last Flight Surgeons' Convention, he displayed this helmet and lectured thereon. He also wrote a paper regarding the helmet, which was to have been printed in a medical magazine.

In addition to his duties as Flight Surgeon, Captain Walter was also the Department of Commerce physician for pilots of the Spokane-Inland Empire region. His duties as Flight Surgeon are now being performed temporarily by Captain Wilfred Newman, of the 161st Infantry regiment, Captain Walter's business associate in private practice. A new Flight Surgeon for the 41st Division Aviation has not yet been appointed.

Notes from Air Corps Fields

Luke Field, T.H., March 17th.

23rd Bombardment Squadron: The contact course at Waimanalo entered on its third week, with Lieuts. Altman and Summerfelt as the latest students. Captain Ladd and Lieuts. Bunch, Coddington and Armstrong have all completed their week's stay and are thoroughly familiar with present position, predicted position, fuze spots and other words and phrases dear to the Artillery.

The Squadron gave a farewell dinner to Privates Pratt and Nelson on March 16th. The men have been with the squadron two years, and their loss will be regretted.

72nd Bombardment Squadron: Lieuts. John J. Hutchison, Charles H. Pottenger and N.L. Callish have been at Waimanalo as contact officers learning something about anti-aircraft firing.

4th Observation Squadron: The radio section has turned into a construction gang and will soon have a room for battery charging and storage.

50th Observation Squadron: Recent promotions among the officers of this Squadron have cut the number of regular 2nd Lieutenants down to two, while the number of 1st Lieutenants has been increased to six, and there has been a slightly fluctuating curve in the upward direction in the number of officers of higher rank. Among those who climbed another rung of the ladder to the "Stars," representing the rank of General, are the following: Captain John G. Fowler, 1st Lieuts. Harry S. Bishop, Edward D. Marshall, Carlyle W. Phillips, Marshall Bonner, all of whom received their promotion by War Department Order, dated February 16, 1936.

The old paint shack, formerly the business place of one Raymond Neander, dope and fabric man of the 50th, has been torn down. A larger and more modern studio has been built to replace the old structure. Bomber crates and old scrap lumber, gathered from place to place, is the only material used in this structure. Michael Angelo Neander, the old maestro, has already begun to decorate his new work house by painting a hula gal meditating on the beach a few hundred yards this side of Diamond Head.

Hawaiian Air Depot, Luke Field, T.H.

After many overhauls, hastened in no small way by the rough landing area at Luke Field, work has been started on a landing mat. The contract, totaling approximately $103,000, was let to Mr. Moses Akiona of Honolulu. The mat will be of macadam, 2500 feet in length by 300 feet in width. It is hoped that the mat will be ready for use before the expected arrival of new aircraft in this Department. However, the airplanes are needed very badly and, mat or no mat, they will be most royally welcomed.

Mr. Arthur W. Burt, machinist, arrived in Hawaii early in March to accept a position with this Depot. He comes from Detroit, where for many years he was closely identified with the automotive industry.

Messrs. Bell, Ervin and Barry returned on the ST. MIHIEL after extended leaves enjoyed in California and points east.

Langley Field, Va., April 1, 1936.

8th Pursuit Group Headquarters: 1st Lieut. Earl W. Hockenberry was relieved of the command of the 8th Pursuit Group Headquarters and of the duties of Adjutant of the Group and transferred to the Station Complement. The duties performed by Lieut. Hockenberry were taken over by 1st Lt. John E. Barr, who arrived at the field on March 16th from a tour of duty in the Philippines.

33rd Pursuit Squadron: A new addition to the Squadron - not al All-American halfback this time, but a future All-American beauty queen - was born to Captain and Mrs. Harry E. Wilson on March 7th. Both mother and daughter are getting along very well, and it is already reported that the bouncing baby girl would take first prize in any baby contest. Squadron wagers are many as to whether she is a future Amelia Earhart or not.

Marshall A. Elkins received his commission as 2nd Lieut., Air Reserve, on March 1st. Congratulations, "Red," and may your work as an officer be as excellent as that exhibited as a Cadet.

An injury on the field of battle was received by Richard Cornwallis Weller. Playing squash in the "Tournament of the Aged," he turned his ankle and was laid up in quarters a few days. Don't let his injury mislead you. We will still match him with your best.

John F. Bledsoe, Jr., resigned his active duty on March 4th to accept a position with American Airlines at Fort Worth, Texas. We lost a good man, and we feel sure that he will make good with the Airlines.

Donald G. Ogden finally returned from winter maneuvers. We thought for a while he had mistaken his orders to read summer instead of winter.

Cadet C.T. Edwinson, transferred to Barksdale Field, La., received his commission on March 1st, and it is understood he was assigned to the 55th Pursuit Squadron at that field.

The last two weeks left us with a few changes, the most important one being the temporary rank conferred upon our squadron commander, Major George F. Schulgen. Our congratulations. Major Schulgen was always a firm believer in Pursuit Aviation, and lately he has been proving its worth as a combat unit. He has been leading the Squadron on gunnery missions every day, and we have been trying to show that the squadron as a unit can fire on a target from long range and still have over 75% of hits on a small target. The results have been even better than expected.

The men who say there will be no place for Pursuit in the next engagement will have a hard time trying to convince us of that fact.

Second Lieut. Joseph D. Lee, Jr., Air Reserve, in addition to his job as Communications Officer, was recently assigned as Assistant Engineering Officer. As an understudy to 2nd Lieut. Richard C. Weller he is getting along very nicely.

35th Pursuit Squadron: Flying Cadets John H. Jeffus and Walter J. Garrison completed their one-year active duty as Cadets and were commissioned second lieutenants in the Air Reserve. They will remain on active duty with this squadron.

Second Lieut. H.G. Robinson, Air Reserve, resigned his active duty to accept an Airline position.

Operations on the firing line were quite active of late, the officers devoting most of their flying time to Gunnery and Exercises connected therewith, averaging three hours per day per pilot. The Exercises consisted of long range formation firing, requiring the use of both 50 and 35 caliber machine guns.

Second Lieut. C.B. Harvin, who has been stationed at Pittsburgh, Pa., on active duty during the absence of the Regular officer in charge at that station, participated in very active duty during the recent flood conditions of that section, dropping food and supplies to the needy.

Second Lieut. E.F. Williams married recently, and his fellow officers presented the happy couple a beautiful silver gift, adding best wishes for their continued happiness.

First Lieut. S.O. Ross, recently promoted to Captain, will remain on active duty with this organization.

36th Pursuit Squadron: Flying Cadet William M. Reeder, enroute to Atlanta, Ga., on a cross-country training mission, was fatally injured on Saturday, March 7th, while taking off from Pope Field, Fayetteville, N.C. Cadet Reeder graduated from Georgia Tech in June, 1934, and entered the July, 1934, Class at Randolph Field. Upon graduation from Kelly Field, he was ordered to Langley Field and attached to this Squadron for tactical training.

The officers and enlisted men of this organization, as well as the other personnel of this field, regret very much the unfortunate accident, and wish to express their sympathy to Cadet Reeder's relative and host of friends.

58th Service Squadron: On March 4th, the Squadron gave a smoker in honor of Master Sergeant, Frank LaChance, who was placed on the retired list on February 29th, after 30 years of service in the U.S. Army. The organization turned out in force. In addition, a number of the older noncommissioned officers of the post aided in giving Sergeant LaChance a rousing farewell and many congratulations on his well earned retirement.

Sergeant LaChance first entered the service on February 26, 1901, and served in the Cavalry, Coast Artillery Corps, Quartermaster Corps and the Air Corps. He participated in the World War, serving his country as a commissioned officer.

20th Bombardment Squadron: Second Lieut. John F. Biggerstaff, Air Reserve, reported on March 1st, and was assigned to this Squadron for six months' active duty.

Two Flying Cadets of this organization were recently commissioned 2nd Lieutenants in the Air Reserve and given a year of active duty. We offer our congratulations to 2nd Lieuts. [illegible], Arthur H. Rogers and Raymond V. Schwanbeck.

Two Flying Cadets, Clarence K. Longacre and Chris H.W. Rueter, recent graduates from Kelly Field, were assigned to this Squadron.

Operations conducted by this organization during the past two weeks were in accordance with Training Schedules No. 22 and 23, Hqrs. 2nd Bombardment Group, GHQ Air Force.

37th Attack Squadron: The Commanding Officer, Ned Schramm, was appointed Major (temporary rank). The Squadron now pursues its activities with a new smartness.

The 37th is grooming its seven A-8 Attack airplanes in order to commence the target season with a full complement of airplanes. A study of the new Training Regulations 440-40 points to a long drawn out season of varied phases of chemical, fixed and flexible gunnery.

The Armament Department has gradually overhauled its equipment in order to assure positive functioning as the season gets under full swing. Sights are being modified in order to increase the number of hits, and the various accessories of the fixed guns are minutely gone over to eliminate excess friction and easier charging.

The Engineering Department is pulling its hair and losing sleep in trying to devise ways and means to obtain more flying hours out the Prestone-leaking, wheezy and many times overhauled engines. It is estimated that not less than 14 engines will be required during this season. With the grace of all concerned and the Middletown Air Depot, the season should wind up early in December.

The 12 enlisted men of this Squadron, who took part in the Winter Test Maneuvers, are still talking about the good time that was had by all - good chow, free entertainment, northern hospitality, and the short working hours. In all, they paint a pretty picture which the stay-at-homes recognize as a smoke screen to be used at some later date in obtaining volunteers for some disagreeable detail. Not one of them, under the most severe cross examination, has broken down and confessed to the least hardship. The snow which we have seen in some of the pictures is claimed to have been a necessity to horse play and soft down to recline in, while the ships were out attacking and searching for the elusive enemy. The 24-hour journey in reconnaissance cars from Concord, N.H., to Mitchel Field, is claimed to have been a well conducted tour for their special benefit, in order that they might enjoy the snow-covered scenery of the New England States. They also mention the exceptional consideration given them by the convoy in backtracking through the Bronx, Harlem and downtown New York, in order that they might have a true picture of the largest city in the world and how one can get through the city by merely driving under the elevated and following close behind trolleys. It is said that murder will out, and we will patiently wait until the true conditions are brought forward in a moment of weakness by one of the clique.

The Squadron feels [illegible], the loss of Staff Sgt. Earl Miller, who transferred to the Ordnance Department and was ordered to the Philippine Department to bring back the "Good Old Flag." Much luck - Lapu Lapu.

The ranks of the Benedicts were increased by two of our members. May all their troubles be little ones.

An instrument flight to Maxwell Field in a C-4A by a well balanced crew will be a much discussed question as to its successful outcome until it is known who flew and for how long a time. The crew comprised Captains Schramm (C.O.); Grussendorf (Engineering Officer); Wolfinbarger (Operations Officer) and Lieut. Zimmerman (Adjutant), the rest of the organization being left behind so as not to crowd them for space.

Two Flying Cadets, Thomas and Eubanks, were commissioned second lieutenants in the Air Reserve. The Squadron welcomes the two brand new lieutenants and wishes them the best of luck.

The Squadron welcomes two additional pilots, Cadets John Eakin and Earl Willoughby, who have just reported for duty after graduation from Kelly Field.

Every individual of this activity is continually scanning the horizon for the much discussed A-17 type airplanes, commenting on its ability to go places and do things, a spirit that the 37th is noted for. But so far we only hear rumors as to when, where and why. Surely, each day brings us closer to our new steeds.

Scott Field, Belleville, Ill., March 16th.

During the past few months the Engineering Department has done a small amount of manufacturing, many of the manufactured items being sent direct to the stations where they will be used. The most interesting items include 100 flying helmets lined with lamb shirling for use in winter flight test work; 200 type A-5 tow targets; 50 jungle emergency landing kits for use in tropical jungle regions where pilots might be required to make a landing. The jungle kit includes the following useful implements: .45 pistol with ammunition, matches, compass, machette and rations. These kits are built so that they can be substituted for the cushion seat of a parachute. Other items are 12 show cases for the Wright Field Museum; 107 parachute flare adapters, type M-8; and 2,600 bin ticket holders for the Hawaiian Air Depot.

On March 14th, the 9th Airship Squadron posed for photographs. These photographs, posed especially for the GHQ Air Force Headquarters, show the various component sections of an airship squadron, viz: headquarters, communications, defense, maneuvering, transportation, supply and miscellaneous sections.

The Scott Field enlisted men staged their second 49er's Party on March 28th with great success. This year's party had many new features, though it was built around the same idea - an 1849 gold rush community. All enlisted artists were called upon to produce large colored drawings descriptive of the life and times of 1849. The party was replete with high sheriffs, deputies, a justice of the peace, a calaboose, rusty sixshooters, walrus moustaches, knee boots, celluloid collars, red flannel undershirts, cowboy accoutrements, hoop skirts, tin pan alley music and inflated mining camp money.

Bolling Field, D.C., April 9th.

Personnel at this station are awaiting the arrival from the Douglas factory at Santa Monica, Calif., of two new bi-motored Transport airplanes, similar to the one now in service as the flying office of Major-General Frank M. Andrews, Commanding General of the GHQ Air Force at Langley Field. The two new planes will be permanently assigned to this station, and will be for the use of the office of the Secretary of War. Members of this command who departed by rail for Santa Monica on March 7th to take delivery on the new planes include: Captains W.L. Ritchie, G.W. McGregor, H.R. Baxter and J.W. Persons, Tech. Sgt. R.W. Hooe, Sgt. W.B. Hoffman, Corporals Droter and King, and Privates Mead and Moore.

The slow, tedious progress of a large holly tree, long a familiar landmark in this vicinity, which is being moved on rails from its former position on the east river rank, is being watched with interest. The tree is reported as being one of the oldest in this section, and tradition has it that it has been on the river bank since the days of George Washington. It will be replanted along the roadway near the Officers' Mess.

Patterson Field, Fairfield, Ohio, April 7th.

Major H.W. Flickinger, our Depot Engineering Officer, is at present undergoing repair and overhaul at Walter Reed General Hospital. After passing from clinic to clinic, we know that when "Flick" returns he will be able to appreciate the feelings of an airplane going through his own shops and, anticipating sarcastic remarks, we hope the results are better.

Captain R.H. Kelly, of Hamilton Field, Calif., is spending a few weeks at the Depot recovering from a forced landing, that is, the airplane is being repaired and Captain Kelly is just spending his time waiting. It all came about as a result of a combination of bad weather and loss of radio reception which caused him to become lost and land at Shelby, Ohio. However, with the help of a pair of propellers borrowed from Wright Field, he was able to fly the airplane, a B-10B, to Patterson Field. As soon as the flood waters subside at the propeller factory, we will be able to send him on his way.

Two "big engine men," the Depot Engineering Officer and his Assistant, were stuck at Mitchel Field for a week, due to engine trouble. After having the engine taken apart, piece by piece, and put together again, the same way, they were able to limp into Bolling Field, but had to borrow an airplane from that station in order to fly back to Patterson, as the sick engine refused to get well.

Selfridge Field, Mich., April 2nd.

Captain Oakley G. Kelly, with his assistant, Staff Sergeant Blair, from Patterson Field, Ohio, spent the period March 23rd to 27th, inspecting the technical equipment at this field.

Captain Daniel C. Doubleday departed for duty at his new station, Wright Field, O., on March 31st. He has been stationed at Selfridge Field since June, 1932.

San Antonio Air Depot, Duncan Field, Texas.

The personnel of the Depot were greatly pleased to receive a visit from Brigadier General A.W. Robins, Chief of the Air Corps Materiel Division, and Major T.H. Chapman, Chief, Inspection Branch, Materiel Division, March 23 to 26, on their inspection tour by air from Wright Field to Maxwell Field, Ala.; Barksdale Field, La.; the Air Corps stations at San Antonio, and thence to the West Coast, from Rockwell Field to Seattle. They were greeted by a host of old friends in this vicinity, as General Robins was formerly Commanding Officer and Major Chapman was at one time Operations Officer of this Depot.

We regret to report that our Commanding Officer, Colonel John H. Howard, has been sick in quarters since March 31st. It is hoped he will be up and around again within a few days.

Majors J.B. Carroll and W.K. Burgess of Chanute Field, Ill., arrived at this Depot in an O-19B, to secure an A-12 for their station, Maj. Burgess ferrying back the A-12, and Major Carroll returning in the O-19B on April 3rd.

The San Antonio Air Depot, particularly its Engineering Department, has proved of great interest to visiting groups of students on several occasions. On March 28th, about 200 members of the Student Branches in the Southwest of the American Society of Mechanical Engineers, then holding their annual spring meeting at the University of Texas, Austin, visited San Antonio, and at a special point on their itinerary made a tour of inspection through the Depot Engineering Shops. The group was in charge of Prof. H.E. Degler, Chairman of the Department of Mechanical Engineering, University of Texas, and Mr. M.L. Begeman, Honorary Chairman of the Student Branch, American Society of Mechanical Engineers, and included representatives from the University of Texas, A.& M. College of Texas, Texas Technological College, Rice Institute, Southern Methodist University, University of Oklahoma, A. & M. College of Oklahoma, and the University of Arkansas. A visit was scheduled for April 4th of about 25 young men of the Senior Aeronautical Engineering Class of the North Texas Agricultural College, Arlington, in charge of Mr. Fred L. Snavely, Instructor of Aircraft Mechanics at that institution, who will include this Depot in a tour of various Air Corps stations in the vicinity of San Antonio.

41st Division Aviation, Wash. National Guard.

"Beat this one, if you can."

Staff Sergeant John Simpson hasn't issued this open invitation to a contest to the Air Corps, but his backers, the 41st Division Aviation, Felts Field, Spokane, Wash., have issued it for him. The little Regular Army sergeant, instructor attached to the 41st Division Aviation, and Mrs. Simpson, are the parents of two future "generals."

"Pete" and "Repeat", as Sergeant Simpson calls them, are twin boys about two weeks old, raising the Simpson family to a girl and two boys. Sergeant and Mrs. Simpson have already started the boys on a military career, which began with their official naming. Prior to the present Regular Army Instructor, Captain Robin Alexander Day, the Instructor was Capt. Robert Gale Breene, now at the Command and General Staff School, Fort Leavenworth. Today, Capts. Day and Breene have name sakes.

Twin No. 1 -- "Robin Alexander" Simpson
Twin No. 2 -- "Robert Gale" Simpson.

"The doctor came out and said he thought it was going to be triplets," said Sgt. Simpson.

"Say, Doctor, can't you make it five? The government might build a hospital for them," replied a sergeant on the alert.

WASHINGTON OFFICE NOTES

On April 8th, Major General Oscar Westover, Chief of the Air Corps, made a visit to the Sikorsky factory at Bridgeport, Conn., returning the same day.

Lieut.-Colonel Arnold N. Krogstad returned on April 8th from a navigation flight to Mitchel Field.

Major Otto G. Trunk returned April 5th from a flight to Mitchel Field.

Major Carl W. Connell made an extended flight to Scott Field, Ill.

Captain Alvan C. Kincaid left April 13th for temporary duty at Wright Field, Ohio.

Captain Francis H. Vanderwerker, formerly on duty in the Patents Section and now stationed at Wright Field, was on temporary duty in the OCAC for a brief period.

During the period of his leave of absence, Captain Herbert K. Baisley is giving a course of lectures at Harvard University on geographical explorations from the aeronautical point of view.

Captain Guy H. Gale, on duty with the Indiana National Guard Air Corps at Indianapolis, was a recent visitor during the course of a navigation flight.

Captains Donald B. Stace and Stewart W. Towle are now on leave of absence.

Recent visitors to the Office of the Chief of the Air Corps during the course of navigation flights were Lieut.-Colonel Carl Spatz, Captains J.P. Hodges and Vincent J. Meloy, students at the Command and General Staff School, Fort Leavenworth, Kansas; Captains E.H. White and Walter E. Richards, from Boston, Mass.; Major Devereux Meyers, from Hamilton Field, enroute to the Martin aircraft factory on a ferrying mission; Major Charles E. Howard, from Langley Field; Captain John F. Wadman, from March Field; Captain Frank M. Paul, from the Coast Artillery School, Fort Monroe, Va.; and Captain Earle G. Carpenter from Mitchel Field, N.Y.

Fort Sill, Oklahoma, April 8th.

The advent of Spring finds Post Field at Fort Sill, Okla., fairly swarming with activity and brings closer the completion of rebuilding work begun sometime ago at this station.

Old hangars are being razed as rapidly as they can be dispensed with, which improves the approach to the landing field from the North and Northeast, and bumps are being leveled out, with a tentative plan imminent to level the whole field which is fairly rolling.

Tree planting has been accomplished on a large scale in a successful attempt to beautify Post Field and supplement the improvidence of Nature in this locality.

First Lieut. H.F. Gregory has been leading the other amateur "Radio Fans" in successful radio operation to date. His telephone to radio, radio to telephone, hookup enables a person to sit at home and talk to a friend at any station or locality blessed with a provident "Radio Ham," thus utilizing radio to the fullest degree; the flexibility of range and the absence of fees being a considerable factor.

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KEEPING FIT

Barksdale Field, La.

Recently a budding poet secured one of the few typewriters rampant on the shield (Pardon, we mean Field), and although such a happening is nearly always a catastrophe, the following particulatly obnoxious mental hallucination resulted:

A soldier came to Barksdale Field and tried to re-enlist,
And out of all the pros and cons the following is the gist:
"Just what has your position been, before you came down here?"

"I've clerked awhile and bugled some, and cooked a little, too;
Worked on the line and crewed a ship, and cut grass while it grew.
I've been a good mechanic in the Engine Overhaul,
And in spare moments learned to do most anything at all."

"But wait a moment, Bud," they said, "You didn't get us right.
Let us explain in more detail, so you can see the light.
The position we referred to requires a lot more skill -
The only thing we care to know is how you hit that pill.

Are you a good first-baseman? Are you very good at short?
Do you serve 'em up right-handed, or fling 'em from the port?
How are you out there in the field - can you bag a Texas Leaguer?
Do you ever bite on slow ones, from being over-eager?"

The poor ex-dogface hung his head, admitting his defeat,
While the squadron clerk sneered his disgust, and showed him to the street.
He made the outfits one by one, from the 55th to the 71st;
But not a place was offered him tho' he wheedled, begged and cursed.

So, come you Johns of sand-lot fame, for Barksdale holds no terrors,
For anyone who knows the art of base-hits, runs and errors.
If you see a pilot oddly dressed and you're curious, don't ask.
That's the latest stream-lined helmet - a baseball catcher's mask.

This poem was made the basis of a letter sent to each organization commander for comment. Of course, the most emphatic denial was the invariable result, accompanied by a greater or less display of indignation. Meanwhile, the baseball season draws near, and it is more or less common knowledge that no unit commander had very much rather win the post pennant that retain his own eyesight and good health.

Luke Field, T.H.

The baseball season is in full swing and the 4th Observation Squadron team took their first two games to keep in the running with the pacesetting 50th Squadron.

Fort Sill, Okla.

Dust storms, while detrimental to flying and an irritant to living conditions, have not stopped the personnel of Flight 'E', 16th Obs. Squadron, and the First Balloon Squadron in athletic endeavor. A soft ball squad has been made up from these two units and, under the able guidance of Master Sgt. Paul H. Dawkins, is developing into a considerable threat to the championship hopes of the local teams.

Selfridge Field, Mich.

The Noncommissioned Officers' Club entertained the members of the Detroit Police Bowling team at a dancing party the evening of March 22nd at the local NCO Club, after the bowling contest held at Selfridge, in which the NCO's bowling team was defeated.

Scott Field, Ill.

Tech. Sgt. Robert S. Wills, Finance Dept., the champion bowler in this region, bowled at Springfield, Ill., during the recent Central Illinois Bowling Association Meet, and emerged second best in both the singles and doubles. Sergeant Wills says that this is an important meet to bowlers in this region.

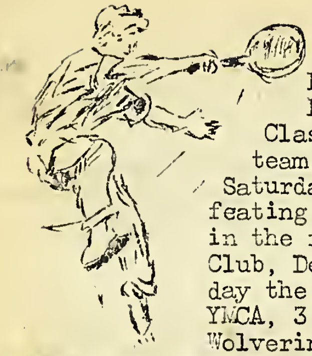
Selfridge Field, Mich.

The Post Basketball Team recently journeyed to Scott Field, Ill., where they met and defeated the Scott Field team by the score of 35 to 28. On the following day the team proceeded to Jefferson Barracks and defeated that team 42 to 21.

Scott Field, Ill.

The Post Basketball Team won 2 games and lost 4. One of the victories was over the 6th Infantry at Jefferson Barracks, score 54 to 21.

The volleyball and softball seasons began March 26th, to run for one month. Suitable cups will be awarded the winning teams of the inter-squadron tournaments. The first rounds of the volleyball and softball inter-squadron championships have been played. The 9th Airship Squadron and the Staff teams are tied, with the 15th Obs. Sqdn. and Station Complement at the bottom rung.



Selfridge Field, Mich.

The Selfridge Field Fliers, led by Lt. Col. Ralph Royce, became the Class B squash racquets team champions of Michigan, Saturday, March 21st, by defeating the Wolverines, 3 to 2, in the finals at the University Club, Detroit. Earlier in the day the Fliers won from the YMCA, 3 to 2, while the Wolverines eliminated the Edison Club, 4 to 1. Col. Royce, playing No.4 for his team, was the first flier to win in the final round, defeating Frank Wilson, 15-8, 15-10, 15-11. The example he set was followed by Lieut. Paul W. Blanchard and Capt. Emmett O'Donnell. The former conquered Thomas Lott, 15-6, 15-8, 15-10, while the latter clinched the team crown with a 15-8, 15-11, 15-9 victory over A.J. Phelan. George Vivian, of the Wolverines, defeated Capt. E.E. Partridge, 15-12, 15-12, 15-7, while Harvey Durand won by default from Major E.J. House.

Scott Field, Ill.

Capt. Leon R. Brownfield, A.C., and Pvt. Donald Phillips, 15th Obs. Squadron (Air Corps Reserve Officer) represented Scott Field in the annual St. Louis indoor tennis championship tournament in the latter part of March. In the singles, Pvt. Phillips was eliminated in the first round, while Capt. Brownfield went as far as the quarter finals. In the doubles, the two, as a team, were eliminated in the quarter finals. They were playing some of the best tennis players in the country.

They are now practicing for the U.S. Army net meet at West Point in June.

Five-bout boxing shows held at Scott Field at regular intervals have proved very successful.

First Lieut. Morris Shedd, Air Reserve, who completed 27 months' active duty at Scott Field in December, 1934, and who does his inactive flying at Scott Field at present, is an outstanding pistol marksman in a local shooting club. Lieut. Shedd shot a monthly average of 86% on a regular 20-yard indoor target range with a Colt .22 cal. Woodsman automatic pistol. This monthly average is unusually high on this range when compared with past figures. Lieut. Shedd is a consistent shooter and is always at the top of the list with the high scorers.

Rockwell Air Depot, Coronado, Calif., April 8th.

Operations at the Rockwell Air Depot for the past month were confined mostly to transient aircraft. During March, there were 71 arrivals at this Depot; 20 of the visitors were outside the Rockwell Air Depot Control Area; 36 visitors were from March Field and 15 visitors from other points in this Control Area. Among these visitors were Brigadier-General A.W. Robins, Chief of the Materiel Division, accompanied by Major Chapman. While here, General Robins made an informal inspection of

TECHNICAL INFORMATION AND ENGINEERING NEWS
Air Corps Materiel Division

High Tension Ignition Cable

A representative of the General Cable Corporation, Rome, New York, visited the Materiel Division regarding high tension ignition cable on March 4, 1936. He stated that they are developing a type of high tension ignition cable, the finished diameter of which will be less than half that of the present standard type, and that it will meet all the requirements of Specification No. 95-28003, in addition to being more resistant to dry heat. He also stated that, if the development progresses as fast as they anticipate, they will request permission, in the near future, to submit a sample to the Division for test.

Clothing Bag, Type B-2A.

An Engineering Section Memorandum Report furnishes information regarding correction of difficulty referred to in Unsatisfactory Report, from Hamilton Field, San Rafael, Calif., on clothing bag, Type B-2A. It was stated that the bag is being redesigned to include heavier material, multiple coat hangers, removal of the pockets on one side, and provisions for a more satisfactory stiffener across the top.

Parachute Pack Opening Cords.

An Engineering Section Memorandum Report furnishes information relative to the effect of low temperatures on parachute pack opening cords.

Automatic Flight and Landings.

A Type C-14 airplane is being equipped with (Sperry) Type A-2 automatic pilot; complete Signal Corps radio equipment, including radio compass and marker beacon receptor, for the purpose of further development of automatic flight and landing equipment. This airplane will be ready for flight tests on or before May 1, 1936.

Electrical Starter Remote Control in Type B-10B Airplanes.

A representative of the Materiel Division supervised at Langley Field, Va., the installation of electrical starter remote controls in Type B-10 airplanes scheduled for the Panama Canal Department, replacing the present manual controls which had proved unsatisfactory. Report is being written.

Rockwell Air Depot (Continued)

all Depot activities.

Brigadier-General H.C. Clagett, commanding the First Wing, GHQ, March Field.

Colonel W.C. McChord, Office of the Chief of the Air Corps, Washington, D.C.

Lieut.-Colonel Olds of Langley Field, Va.

Majors Maxwell and Kessler of Selfridge Field.

Captains Perrin and Warren of the San Antonio Air Depot.

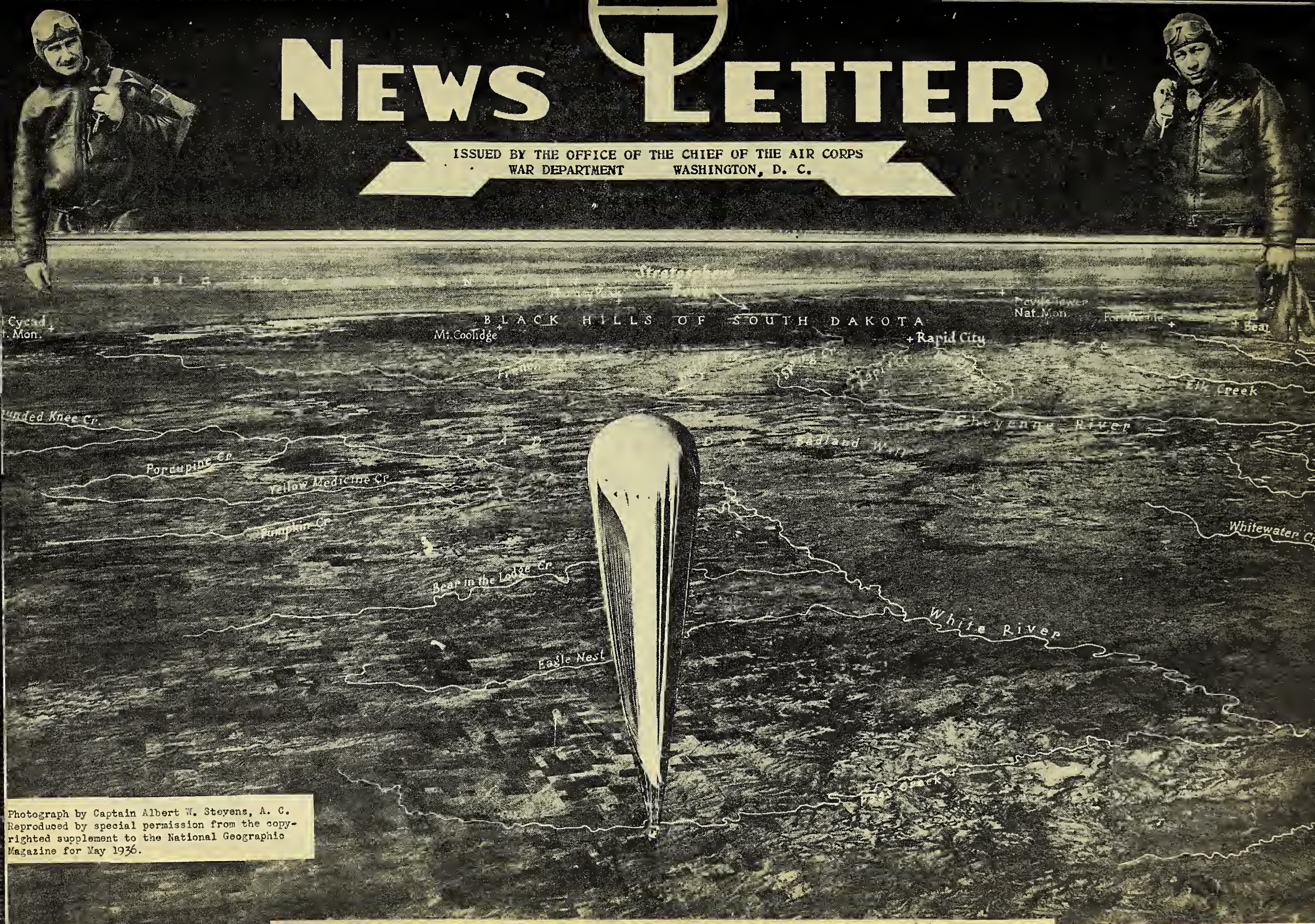
Captain L.P. Whitten of Wright Field, Ohio.

Captain Tally of Barksdale Field, La.

Captains Paul E. Burrows, of Pearson Field, Vancouver Barracks, Wash., and John H. Gardner, of Boeing Field, Seattle, Wash., are at the Depot at present awaiting radio installations to be completed in their O-19B airplanes.

NEWS LETTER

ISSUED BY THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT WASHINGTON, D. C.



Photograph by Captain Albert W. Stevens, A. C. Reproduced by special permission from the copyrighted supplement to the National Geographic Magazine for May 1936.

VOL. XIX MAY 1, 1936

VOL. XIX AIR CORPS NEWS LETTER NO. 9.
Information Division Air Corps
May 1, 1936
Munitions Building Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE STRATOSPHERE FLIGHT

The following extracts are made from the report of Captain Albert W. Stevens, Air Corps, on the flight of the Explorer II, and the annexes thereto, prepared by Captains Orvil A. Anderson and Randolph P. Williams, Air Corps:

Captain Stevens' Report

* * The fabric of the Explorer I was the best selected long staple cotton, largely 3 ounces in weight, with a 2-ounce bottom. In the Explorer II, the bottom fabric was made 3 ounces and that portion from the upper catenary to the crown point of the balloon, which had been 3 ounces weight in Explorer I, was made 4 ounces in weight in the Explorer II.

It was decided to so fold the balloon that the bottom fabric would not be folded upward into the fabric of the upper part of the balloon. The balloon was therefore folded and shipped with the bottom fabric completely extended.

As a further precaution the fabric of the balloon Explorer II was pigmented with white material on both sides to prevent the possibility of adhesions. In the Explorer I the inside of the balloon was rubberized with unpigmented rubber which was to some extent "tacky," The outside of the fabric of Explorer I was coated with white pigmented rubber. The fabric of Explorer II was coated with rubber white pigmented on both sides.

These changes in folding and pigmentation completely did away with certain troubles that occurred in handling the Explorer I.

In addition, a further change was made in the rigging of the balloon, by the substitution of webbing in place of the manila ropes used in 1934. It was noticed that the manila ropes twisted together when load was applied to them, and that they untwisted with great reluctance and in some cases not at all. The use of webbing in the flight of Explorer II did away with this kind of trouble; no twisting occurred of the form where one webbing twisted with another.

It was decided to use three appendices on the Explorer II, of sufficient size to insure ready discharge of gas when the balloon would be full and still be rising. It was decided that several appendices of moderate size were better than a single large one.

No change was considered necessary in the design of the pneumatically operated balloon valves. It was decided to abandon entirely the use of a rope actuated valve such as was used on the Explorer I, and to use two pneumatically operated valves such as the one previously used in connection with the rope actuated valve referred to. It was felt that one such valve was sufficient for operation of the balloon, and that the second valve should be installed simply as a safety measure. **

Arrangements were made with the Commanding Officer at Fort Meade to furnish at the proper time nearly 200 soldiers for duty on the day of inflation. He assigned to the camp a Medical officer and two Hospital Corps men, and an Army ambulance was provided. An officer from Fort Meade was assigned to take charge of the Cavalry detachment. The Fort Meade organization functioned perfectly. Without its valuable assistance and cooperation a stratosphere flight from Rapid City would be impracticable. * * *

Too much praise cannot be given to the Cavalry Detachment at this time, to the scientists, and to the civilian personnel, in making the best of what may have been regarded as a disagreeable situation. Although these men were sleeping and eating in Army tents intended primarily for summer use, they went about their duties without comment and maintained a high degree of optimism. The morale of the camp was excellent at all times.

Prior to November 10, the snow had been removed as fast as it fell. Some snow had fallen on November 9th, and a few men worked all night with scrapers to remove the last light snowfall. On November 10, the weather conditions, in the opinion of Captain Williams as meteorological officer and Captain Anderson as pilot, was so good that preparations were made for inflation early in the morning. By afternoon the balloon envelope had been taken from its box, spread on the ground, and prepared for the admission of gas. As in July, inflation progressed with remarkable freedom from confusion until 20,000 cubic feet had been admitted.

The balloon had been kept in the box in which it was shipped from the factory and this box had been kept in a tent heated by small oil stoves with a view to maintaining the balloon at a temperature between 40 and 50 degrees Fahrenheit. When the box was opened the balloon fabric was fairly warm and flexible. On exposure to the near zero temperature of the Stratobowl the fabric soon stiffened and it was found that it was somewhat more difficult to inflate it than had been the case in July. However, no appreciable difficulty occurred in the laying out of the balloon, nor was the time for spreading it out extended.

Shortly after inflation was started, when approximately 20,000 cubic feet of helium had been admitted, a slight noise occurred that indicated that a burst had taken place in the fabric somewhere under the top of the bag. The balloon was allowed to rise by the admission of still more gas; inspection of it was started, as it rose, to find the rip. The rip was finally located; it proved to be a lateral rip 17 feet in length, located in the panel immediately below the equator line of the balloon. The rip was due entirely to a lock in the fabric of the balloon. Such an accident is entirely preventable in the future by the introduction of still another filling appendix located just under the upper catenary band of the balloon. Such an appendix, easily visible, and readily accessible, would on another inflation insure a smooth, unobstructed passage of gas directly into the top of the balloon, without possibility of a lock forming.

The gondola was attached, and still more helium was admitted until it lifted the weight of the gondola, its instruments, and the necessary ballast. The take-off had been planned for 5:30 a.m., but to the delay caused by the accident, the actual take-off was at 7:01 a.m.***"

Captain Anderson's Report

" * * * At take-off an eight-mile wind from the northwest was blowing across the rim of the inflation bowl, about 500 feet above the inflation bed. No wind was being registered in the bowl or evidenced on the bag now extending about 320 feet above the ground. To offset as much as possible the action of this rim wind on the balloon while clearing the surrounding hills, the balloon was maneuvered to the northwest corner of the floor of the bowl. It was then trimmed light about 700 pounds to effect a rapid rise. These steps were considered ample to insure protection to the balloon while rising out of the bowl. On being released by the maneuvering crew the balloon rose quite rapidly and was apparently clearing the rim by a wide margin when it came to a rather abrupt stop at an elevation about 100 feet above the rim, and started to descend. Because of the balloon's proximity to the cliffs surrounded the side of the bowl toward which the balloon was then drifting, ballast was expended quite freely to stop this descent; 800 pounds of lead shot being discharged. The descent was stopped after a loss in altitude of 50 feet. There was available for immediate discharge an additional 2,250 pounds of lead ballast if needed. With this available ballast the situation through which the balloon passed at this time did not endanger the flight. While no wind was noticed on the top of the gondola it is concluded that this sudden stop and descent of the balloon was caused by the dynamic action on the top of the bag of a strong downdraft of turbulent air. **

A rate of rise of approximately 600 feet per minute was maintained to an altitude of 16,500 feet, which was reached at 7:30 a.m. At this altitude the balloon was brought to rest while a complete inspection was made of rigging and controls from the outside of the gondola, followed by a check of ballast used. A complete inspection and check of apparatus inside was then made. When this work was completed the man-hole doors were sealed, and the air repurifying apparatus put into operation. Frequent valving was necessary during the period of stay at this altitude to offset the increase and lift through superheating. * * * No more ballast was released until pressure ceiling was reached at an indicated altitude of 65,000 feet. The bag in rising to this height slowly increased its rate of ascent until a maximum of about 600 feet per minute was gained.**

The ceiling was reached at 10:50 a.m. The indicated altitude, with instrument correction applied, was then 73,000 feet. We remained at this approximate altitude for one hour and thirty minutes. During this time with the outside air remaining approximately at -60° C. the temperature of the gas increased from -20° C. to 0° C. as indicated by the visual thermometer hanging eighty feet below the top of the balloon bag. It is believed that this thermometer, due to its nearness to the bag surface indicated temperatures higher than the mean temperature of the gas. * * *

At 12:20 p.m. the balloon was valved to start the return to earth. A very generous release of gas was needed to start a positive descent, and very frequent valving thereafter to keep the balloon descending at a rate of about 300 feet per minute for the first 30,000 feet. During the periods when the valves were closed the rate of descent would slowly decrease. With more time available for descent through the stratosphere this descent could be made with less loss of gas.

The valves were opened for the last time around 40,000 feet. After passing this altitude the balloon, now entering the troposphere, began to lose superheat and, for about 5,000 feet, maintained a uniform rate of descent of about 400 feet per minute and then began losing lift at an ever increasing rate.

Ballast was first discharged at 34,000 feet on the descent to earth. From this altitude to the ground approximately 1,900 pounds of ballast was expended to keep the descent in check. The maximum rate of fall never exceeded 800 feet per minute. * * *

The gondola ports were opened at 16,000 feet. At 10,000 feet the rate of descent was gradually decreased, bringing the balloon almost to rest at 2,000 feet above the ground. From this altitude to the landing, the rate of fall was kept very low until the drag rope reached the ground. The further descent was checked, and this altitude was maintained until the balloon had drifted past the possible hazard of a grove of trees and farm buildings, when, with a suitable field ahead, it was allowed to settle slowly and ripped just before the gondola touched the ground. The rip, tearing laterally around the cap of the balloon, resulted in immediate deflation of the bag. * * * "

Captain Williams' Report

" * * * The need for an accurate weather service was recognized by the sponsors and the flight personnel and had been demonstrated in past expeditions. The exacting weather requirements of stratosphere ballooning demand a forecasting service of the most complete type, capable of foreseeing approximately thirty hours in advance the weather which will prevail over an area of several states. Such a service was organized and installed at the Stratocamp in a field weather station that functioned throughout the occupation of the camp. * * For the flight the sky should be clear, for photographic purposes and because the presence of clouds penalizes the performance of the balloon.

For landing the sky should also be clear and the ground wind should not exceed 14 MPH.

To forecast such weather a day or more in advance requires the reception of a tremendous volume of weather data, the utilization of this data on many maps and charts, long hours of station operation and modern methods of air mass analysis. Such a proceedure was followed in the Bowl. * * *

It was evident that the situation which offers the greatest security during inflation and flight was that which occurs when a large, cold, dry, Polar air mass, creating a high pressure area, moves into the United States and centers during the inflation period over Rapid City. This condition must produce an almost calm in the Stratobowl during the inflation and be followed by ideal flight conditions. Any other weather situation would be less favorable and therefore less consistent with maximum safety. The policy was therefore early adopted of waiting for this condition, which previous study of the climatic records had shown to occur during every summer and fall. This policy was supported by the sponsors, the flight personnel and all members of the expedition. * * "

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NAVIGATION CLASS COMPLETES COURSE

April 1st found another navigation class completing the prescribed course in the Ninth Bombardment Group Navigation school at Mitchel Field, N.Y. Air Corps officers who completed the navigation course on the date mentioned were Captains J.F. Olive, P.H. Johnston, J.K. DeArmond and Lieut. C.B. Dougher. A graduation flight to Miami, Fla., and return, which involves an over-water "hop" from Diamond Shoal lightship to Jacksonville, or a distance of 407 miles, is projected.

The third class of the year, consisting of Captains Laubach, Eaton, Lieuts. Neely and Hutchison, started the navigation course shortly following the termination of the preceding one.

During March, a lecture on celestial navigation was given at the Hayden Planetarium in New York City by Mr. William Barton, associate curator. It is believed that this is the first time a Planetarium has been used as a navigation class room. Practically all the officers of Mitchel Field and a great many of their wives attended.

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NEW CONCRETE APRON FOR SCOTT FIELD

WPA workmen commenced work on April 1st on the new concrete apron for the airplane hangars at Scott Field, Belleville, Ill. This apron will be approximately 1,000 feet long by 100 feet wide, from six to eight inches thick, and reinforced throughout. It will have a concrete drain along the landing field side and will be equipped with three airplane wash racks and a number of gasoline refueling boxes.

The apron will extend from the Operations Office northward along the line of hangars. It will be laid in 25-foot strips, much in the same manner in which a highway is laid.

A railroad spur about 500 feet long has been laid to facilitate the handling of the materials. Forms are now being placed for the apron.

A landscaping project along the west side of Scott Field, adjacent to the new State highway, is practically completed. To date, 200 elm trees and 1000 shrubs of various kinds have been transplanted.

ALBROOK FIELD'S LARGEST REVIEW

ALBROOK Field, Panama Canal Zone, was the scene on April 2, 1936, of the largest review in the history of the Panama Canal Department. Approximately 11,000 troops, all available motor transportation and airplanes participated.

The Review was received by the Honorable Harry H. Woodring, the Assistant Secretary of War, at that time in Panama making an extensive inspection of the Canal Zone and its installations. The 16th Pursuit Group, stationed at Albrook Field, participated as usual on foot, in trucks and in the air. The air echelon of P-12E and P-12F airplanes was commanded by Lieut.-Colonel Charles T. Phillips; the foot troops by Major Warner B. Gates and the motor elements by Captain Flint Garrison, Jr.

The feature of the Review was the presentation of the Department Commander's Trophy for general excellence, which is annually awarded to one unit of each branch of the service. The Air Corps winner this year was the 44th Observation Squadron, commanded by Major Warner B. Gates.

The 19th Composite Wing, Lieut.-Colonel Junius H. Houghton, Commanding, passed in review immediately after the last ground element had cleared the reviewing stand. In the Wing formation were the largest number of airplanes yet to be assembled in the Panama Canal Department for a similar ceremony. First came the O-19 Observation planes, followed by B-6 Bombers, then the P-12 Pursuit planes of the 16th Group and, finally, the B-10B Bombers which had completed on the preceding day the ferry flight from Langley Field to France Field. The B-10's were flown in the Review by the ferrying personnel, commanded by Lieut.-Col. Charles B. Oldfield, and these modern Bombers were easily the "sensation" of the Review. At the conclusion of the Review, the Bombers returned to France Field, while the 16th Pursuit Group landed at Albrook Field.

Both Mr. Woodring and the Department Commander, Major-General Lytle Brown, expressed themselves as being especially pleased with the showing made by the 19th Composite Wing.

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HIGH ALTITUDES AT SCOTT FIELD

The two tallest men at Scott Field, Belleville, Ill., are Private, 1st Class, Earl B. Harden, Station Complement, and Private Cyril R. Shelton, 21st Photo Section, both of whom are six feet, five inches tall. There are over twenty other enlisted men at Scott Field who are over six feet tall.

7TH BOMBARDMENT GROUP GOES INTO CAMP

Bombing training with the 7th Bombardment Group, Hamilton Field, Calif., is not taken lightly. At present, the 9th Bombardment Squadron is engaged in a two weeks' period of intensive training at Mather Field, Sacramento, Calif., formerly the home of the 20th Pursuit Group and, until several years ago, under the command of the present 7th Bombardment Group Commander, Lieut.-Colonel Clarence L. Tinker.

A camp is being maintained at Mather Field by the 69th and 70th Service Squadrons. Each tactical organization undergoes rigorous training for approximately two weeks. Under the provisions of the old TR 440-40, the 11th and 31st Bombardment Squadrons have completed their training. At the conclusion of bombing training by the 9th Squadron, the 31st will again move to Mather Field to renew training under the new TR 440-40 (tentative).

Mather Field is ideally situated and fills a long felt need of the 7th Bombardment Group. Flying conditions are continually in accord with operations, being hot during the day and cold at night.

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A SUCCESSFUL LANDING MINUS WHEELS

Personnel at Hamilton Field, Calif., were recently treated to a bit of unintentional aerial acrobatics when Major Devereux M. Myers, commanding officer of the 70th Service Squadron, brought a B-12 in on its belly.

Major Myers took off from Delno, Calif., on a night mission to Hamilton Field. Arriving after darkness, he prepared to land and found that the left landing gear cable had broken, jamming the gear in a half-down position. Contacting the ground by radio, he informed Lieut.-Col. C.L. Tinker, Hamilton Field commander, of his predicament and prepared to attempt a landing off the mat on the grass and soft earth. However simple it may appear, landing a big ship sans landing gear is not an inviting prospect. Despite the seriousness and danger of the situation, an impressive sight was presented as the big ship glided down through the glare of the flood lights and came to a neat landing. The airplane was only slightly damaged. Privates Reynolds and Henderson were on board the Bomber as radio operator and crew chief, respectively.

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The 72nd Bombardment Squadron, stationed at Luke Field, T.H., aided the National Park Service by sowing Koa seed over the northern half of the Waianae Range from a formation of Bombers recently.

REUNION OF AIR SERVICE WAR VETERANS

The 267th Aero Squadron Association will hold its third annual reunion at Indianapolis, Ind., on Sunday, May 31st, the day following the annual 500-mile automobile race, and a large attendance is anticipated.

Last year, 22 World War veterans, members of the former 267th Aero Squadron, held their reunion in Champaign, Ill., and they took advantage of the nearness of that well known college town to Chanute Field, Rantoul, Ill., where the 267th was formed during the war, to visit the Air Corps Technical School for a tour of inspection and to gain information on the various activities thereat.

It goes without saying that these veterans thoroughly enjoyed the reunion and spent many pleasant hours going over their interesting experiences during the exciting war days of 1917-18. Some of the veterans came from localities over 900 miles distant in order to meet the "Gang."

This year the annual business and "hand-shaking" period will be held at 10:30 a.m., at the old University Club on North Meridian Street, Indianapolis. The annual banquet and entertainment will be held at the Hotel Antlers in the afternoon. Elaborate plans are being made for the banquet and something different in the entertainment line is being arranged.

From Chanute Field, the 267th Aero Squadron went overseas and performed service with the British Royal Air Force at Kent County, England. There are about 150 members of the original squadron who are eligible for membership in the Association. The members are scattered all over the country and, as a result, only 87 have been located. The officers of the Association, Mr. L.K. Handorf, 430 N. Meridian Street, President, and Mr. L.A. Hessey, 3557 Kenwood Avenue, Secretary and Treasurer, both of Indianapolis, are very anxious that news of this next reunion reach as many eligible members as possible. They will greatly appreciate it if former members of the 267th will write to the President or the Secretary.

The first president of the Association was Mr. Lee Stonebreaker, and the first secretary-treasurer, Mr. James Boers, both of Champaign, Ill. These two officers were instrumental in the forming of the Association, and have announced their intention of being present at the coming reunion to help carry along the work of perpetuating the organization.

Members from South Dakota, Minnesota, Pennsylvania, Virginia and Michigan attended the 1935 reunion. Members from California, Texas, West Virginia and Massachusetts, in addition to the States represented last year, have expressed their intention of making this year's pilgrimage to Indianapolis.

Letters addressed to the following members of the 267th were returned, marked "Unclaimed."

Albright, Leroy
Bell, J.A.
Blair, W.M.
Blanford, Harold
Bluim, Milton F.
Boyd, William P.
Brodie, John L.
Brokaw, I.A.
Cowan, I.A.
Crinshaw, I.A.
Eade, Ivan C.
Elliott, Don
Elfstrom, Fred G.
Flint, E.M.
Forrest, Kenneth G.
Goodman, Jack
Gunderson, Garfield
Hanham, L.W.
Hanson, Raymond W.
Hasse, Harold
Hathorne, Carl L.
Hayden, R.S.
Hufnagle, Jack
Happy, H.H.
Hayden, R.S.
Holtz, George
Johnson, Joseph
Jordan, Thomas
Jones, J.O.
Kappas, James
Klein, Fred D.
Litlon, George W.
McKittrick, P.B.
McMenamy, William F.
Mishler, Lloyd L.
Mitchell, A.G.
Moffitt, Thomas O.
Morris, Monty
Munier, Laurence N.
McCoy, Paul C.
Neilson, Alfred
Pietsch
Pool, Robert P.
Pope, Girwood M.
Spencer, Harold
Siegel, Henry
Walton, W.F.

It is not beyond the realm of possibility that some readers of the News Letter may be acquainted with and know the whereabouts of one or more of the above-named members of the old 267th, in which event they can perform their daily good deed by taking their pen in hand and dropping a line to one of the officers of the 267th Aero Squadron Association.

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REVIVING THE BLUE MESS JACKET

Officers of the 7th Bombardment Group at Hamilton Field, San Rafael, Calif., are going far in reviving the custom of wearing the blue mess jacket at social functions. Lieut.-Colonel C.L. Tinker, post commander, was the first officer in the Group to wear the mess jacket. His snappy and well dressed appearance prompted other officers to follow his example, and at present approximately 90% of the members of the 7th Group have blue mess jackets.

"It is felt that the color that is added to social functions is of extreme importance in giving the Air Corps the prestige and importance which it deserves," says the Hamilton Field Correspondent.

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The new swimming pool, being built as a part of the WPA project now in progress at Bolling Field, D.C., is in an advanced stage of construction. Concrete, forming the sides of the pool, has been poured and tile is being laid. The pool will be completed for use during the coming season and will probably be the most popular spot on the post.

PURSUITERS IN PANAMA COMPLETE FIELD TRAINING

THE 16th Pursuit Group, stationed at Albrook Field, Panama Canal Zone, and commanded by Lieut.-Col. Charles T. Phillips, Air Corps, completed its annual period of field training on March 27, 1936, after operating for approximately two weeks on the temporary airdrome at Aguadulce, Republic of Panama.

The 16th Group, as a component of the 19th Composite Wing (less 44th Observation Squadron), operated as a part of the Red Force which was assumed to have effected the landing in the Foncesca Bay region and at Aguadulce, and was advancing with a mission of capturing, without destroying, the Panama Canal.

The 11th Engineers formed an advance guard of the Red Force, and all other Red troops were assumed. The remaining forces of the Panama Canal Department formed the Blue, or defending force. The Air Force of the Canal was assumed to have been destroyed, while the Red Force was effecting the landing, only three O-19 airplanes assigned to the 44th Observation Squadron surviving. They had been forced to occupy an airdrome at LaChorrera.

During the period of maneuvers, all supplies, including gasoline and oil for the Red Ground and Air Forces, were furnished from a base established at the small port of Aguadulce.

The area of the Municipal Airport at Aguadulce was too small for the accommodation of the entire 19th Composite Wing, and a new field, known as Aguadulce No.2, was built within a mile of the old field and occupied by the 16th Pursuit Group. It was found that the P-12E and P-12 airplanes with the Group could be fully serviced in approximately fifty minutes from drums carried on trucks, plus one light duty field servicing truck.

While the Pursuit Group accomplished a number of missions in cooperation with the 25th Bombardment Squadron, the absence of hostile aviation permitted it to be employed in many instances on ground straffing missions to delay the Blue Forces, which were seeking to capture the Red advance guard.

The feature of the maneuvers was the night operations from the newly improvised field at Aguadulce. This is the first time night operations have been conducted in the Panama Canal Department from auxiliary fields. Most of the night work fell to the 25th Bombardment Squadron, but on several missions Pursuit cooperation was required. A feature of the night operations was elements of Pursuit simulating attacks on searchlights in the Panama Bay, which were operating against small boats attempting to land troops to take the defenders in rear.

The field at Aguadulce was lighted by kerosene pots, and two anti-aircraft searchlights were used in lieu of flood lights. The two searchlights were depressed along the edges of the runway for take-offs and landings, and when all airplanes were away from the field one of the lights was used as a beacon. Incidently, it was the only beacon for the entire distance of 120 miles between Aguadulce and the defense installations in Panama Bay.

The planes of the 16th Pursuit Group were flown a total of 468 hours on forty tactical missions, an average of 29 out of 30 airplanes being kept in commission during the maneuver period.

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QUARTERLY TEST OF 90TH ATTACK SQUADRON

The quarterly test of the 90th Attack Squadron, Barksdale Field, La., with full field equipment, was conducted from April 6th to 10th at Natchitoches, La.

The 90th Squadron ground echelon, in company with ground echelons of the 8th and 13th Attack Squadrons, left Barksdale Field at 8:00 a.m., and arrived at Natchitoches two hours later. The weather was threatening when the convoy started, and it was raining by the time the airport at Natchitoches was reached.

The air echelon left Barksdale Field at 11:10 a.m., and flew to its destination in 35 minutes. By that time the camp had been set up and a meal started. The ships were serviced, the plugs on the engine of one of the ships changed, and cockpit and engine covers installed. After the noon meal, the convoy of the 8th and 13th Squadrons left on the return trip.

Despite a low ceiling the next day, three missions were carried out, one in the morning and two in the afternoon. On the morning of the 10th, another mission was flown. Meanwhile, preparations were made to break camp, and the tents were taken down and stowed aboard the motor convoy.

After the flight returned from its mission, a soft ball game was started, the competition being between the officers and enlisted men. The game was stopped at meal time, with the enlisted men ahead by a comfortable margin.

The ground echelon left on the return trip at 1:00 p.m., and the planes left at 2:40 p.m., both arriving at Barksdale Field at about 3:15 p.m.

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Early in the afternoon of April 4th, 30 students of the Air Corps Tactical School, with Majors Smith, Kiel, Captain Huggins and 28 enlisted men, left Maxwell Field for the the gunnery base at Valparaiso,Fla., where the students were assigned aerial gunnery missions. The return flight was made on April 5th.

PROGRESS AT THE NEW BOLLING FIELD

THE everlasting grading, filling in and levelling work on the site of the new Bolling Field continues, with 900 men making the dirt fly during nearly all the daylight hours. The actual grading is rapidly being completed, and long, broad runways are becoming more and more clearly defined. The entire immense project presents a striking view from the air, with the hundreds of men, tractors and trucks busily at work.

The runways are to be completely paved, making an all-weather field for even the heaviest and fastest airplanes.

Probably the most difficult task confronting the W.P.A. workers is the blasting out of the heavy foundations of the old steel plant at Giesboro Point, in the southwest section of the new area.

Although no flying operations are being conducted from the new field, there is a paved area nearly 800 feet long along the east side of the field which is available in case of emergency. Eventually this strip will be the field apron, along which will stand the field hangars and which will connect with the runway system. No funds have been made available for the construction of hangars.

There is also now in process of construction a new road east of the railroad siding which serves the hangar and fueling area of the field, connecting the various technical buildings of the new military post and communicating with roads into the barracks and quarters area. The work of landscaping the post is also going forward.

The War Department already has spent $2,077,245. on the new Bolling Field, in addition to which some $1,200,000 of W.P.A. funds has been expended or made available. It is estimated that $3,800,000 more will be required to put the field in operation. Some of this has been authorized by Congress, and the final authorization of $606,075 has been included in the $30,000,000 Army construction bill introduced in the House of Representatives by Chairman McSwain of the Military Affairs Committee.

The plan for the new field provides a main runway which eventually may be extended to a length of approximately 5,000 feet. This will make possible full-load take-offs with the largest airplanes so far constructed or designed, and the new field may be the scene of take-offs of planes undertaking distance and endurance records.

The new Bolling Field is to the south of the present Air Corps field, with the Potomac River on one side and the Anacostia hills on the other. The barracks and living quarters are located in the wooded area on the lower slopes of the hills. Although all flying is done from the old Bolling Field, the officers and men now are quartered at the new field in structures which are among the finest of their kind in the Army.

Bolling Field is garrisoned by the 14th Bombardment Squadron, the 21st Observation Squadron and the 100th Service Squadron. Lieut.-Colonel William Ord Ryan, Air Corps, is the Station Complement Commander.

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LIEUT.-COLONEL WILLIAM ORD RYAN

One of but very few officers in the Air Corps who can lay claim to the distinction of twice going through an Army flying training course is Lieut.-Colonel William Ord Ryan, now on duty as Commanding Officer of Bolling Field, D.C. The interval of time between these two flying courses was about twelve years. In the case of Col. Ryan, -and this seems to hold true in the cases of a number of other officers in the service and of individuals in commercial aviation - there is typified the strong appeal aviation holds for the individual once he has entered the flying game.

Col. Ryan was born at San Antonio, Texas, August 10, 1891. He graduated from the U.S. Military Academy in June, 1914, and was commissioned a second lieutenant of Cavalry. He was promoted to 1st Lieutenant of Cavalry on July 1, 1916, and during his career as a Cavalryman he served with the 9th, 7th and 17th regiments.

Applying for and receiving a detail in the Aviation Section, Signal Corps, to undergo flying training, he was sent to the Signal Corps Aviation School at San Diego, Calif., in November, 1916; completed the course of instruction, and received the rating of Junior Military Aviator on May 3, 1917.

From San Diego, Col. Ryan proceeded to Columbus, New Mexico, that little border town which some years ago figured so prominently in newspaper headlines as a result of the surprise raid of the bandit Villa, and which was the station of the 1st Aero Squadron, then commanded by Captain Benjamin D. Foulois. Col. Ryan served with this organization from May 5 to September 12, 1917, and accompanied it when it sailed for duty in France. From September 12 to June 26, 1918, Col. Ryan was in command of the 8th Aviation Instruction Center at Foggia, Italy, in addition to being Officer in Charge of all aviation schools in Italy and of all detachments of American aviation personnel at Italian schools.

Transferred to the Third Aviation Instruction Center in France, he was a student officer thereat until July 24th, when he was ordered to the Advanced Aviation Instruction Center at Cazaux, France, for duty as Commanding Officer. On October 31, 1918, he was transferred to the Aerial Gunnery School at St.Jean de Monts, France, for duty as Executive Officer.

Assigned to the American Army of Occupation in Germany in March, 1919, Col. Ryan served with the Air Service, Third Army, at Coblenz. Later he was on duty at several other stations in Germany. Upon his return to the United States and following a brief period of duty in connection with recruiting at Hazelhurst Field, L.I., New York, he was, on August 1, 1919, transferred to the Panama Canal Zone, where he was on duty as Executive Officer of France Field and Commanding Officer of the 7th Aero Squadron until his resignation from the military service, October 5, 1920.

Appointed a Major of Field Artillery, May 17, 1921, he served with this branch of the service until June, 1927, when he was detailed to the Air Corps. During his service with the Field Artillery, he completed the Battery Officers' course at the Field Artillery School in 1922; the advanced course at that school in 1926, and graduated from the Command and General Staff School, Fort Leavenworth, Kansas, in June, 1927.

Upon rejoining the Air Corps, Col. Ryan completed the primary flying course at Brooks Field, and the advanced course at Kelly Field, Texas, receiving the rating of Airplane Pilot on June 25, 1928. On August 16th of that year, he was transferred to the Air Corps.

Assigned to station in New York City, he was on duty with the Organized Reserves, 2nd Corps Area, until July 1, 1929, and at various times served as Acting and Assistant Corps Area Air Officer.

Col. Ryan commanded Mitchel Field, N.Y., from July 1 to September 4, 1929, and was Post Operations Officer thereafter until July 31, 1932, when he was assigned as student at the Air Corps Tactical School at Maxwell Field, Ala. Following his graduation from this School in June, 1933, he remained at Maxwell Field, occupying the position of Post Executive Officer and serving as a member of the Air Corps Board until December, 1935, when he was transferred to Bolling Field, D.C. On January 31,1936, he was assigned to command the Station Complement at that post, with the temporary rank of Lieut.-Colonel. He is now on duty as Commanding Officer thereof.

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During March, the Engineering Department of the San Antonio Air Depot overhauled 20 airplanes and 80 engines, and repaired 17 planes and 20 engines.

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AIR CORPS LEGISLATION

Identical in wording, S. 4309 was introduced in the Senate by Hon. Morris Sheppard, and H.R. 11920 in the House of Representatives by Hon. John J. McSwain, the text of which is as follows:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the President be, and he is hereby, authorized to call to active duty, with their consent, for periods of not more than five years, such number of Army Air Corps Reserve officers as he may deem necessary, not to exceed one thousand, three hundred and fifty.

Sec. 2. Upon the termination of such a period of active duty of not less than three years in duration, such Air Corps Reserve officers shall be paid a lump sum of $500, which sum shall be in addition to any pay and allowances which they may otherwise be entitled to receive.

Sec. 3. All laws and parts of laws insofar as they are inconsistent with this Act are hereby repealed."

H.R. 11920 was recently passed by the House of Representatives, but was amended by Changing Sec. 3 to Section 6, the three additional sections of the bill reading as follows:

Sec. 3. The sixth proviso of section 2, Act of July 2, 1926 (44 Stat. L.781), is hereby amended by striking out the words "Whenever used in this Act a flying officer in time of peace is defined as one who has received an aeronautical rating as a pilot of service types of aircraft", and by substituting in lieu thereof the following: "A flying officer in time of peace is defined as one who has received an aeronautical rating as a pilot of service types of aircraft or one who has received an aeronautical rating as an aircraft observer: Provided, That in time of peace no one may be rated as an aircraft observer unless he has previously qualified as a pilot: Provided further, That any officer rated as an aircraft observer in time of war must subsequently qualify as a pilot before he can qualify as an observer in time of peace following such war."

Sec. 4. The President is authorized to appoint to temporary rank in the grades of colonel, lieutenant colonel, and major, without vacating their permanent commissions, such numbers of officers of the Regular Army Air Corps as the Secretary of War, from time to time, may determine as necessary to meet the administrative, tactical, technical, and training needs of the Air Corps; the then resulting numbers in each grade, permanent and temporary, to be further increased by 5 per centum to meet the additional needs of the War Department for Air Corps officers: Provided, That such temporary appointments shall be made in order of seniority of the appointees in each grade in accordance with their standing on the relative rank list of Air Corps officers in their permanent grade, and that when an officer holding a temporary appointment under the provisions of this section becomes entitled to permanent promotion his temporary appointment shall be vacated: Provided further, That all Air Corps officers temporarily advanced in grade take rank in the grade to which temporarily advanced after officers holding such grade through permanent appointment, and among themselves in the order in which they stand on the relative rank list of Air Corps officers in their permanent grade: Provided further, That Air Corps officers temporarily appointed under the provisions of this Act shall be entitled to the pay, flying pay, and allowances pertaining to the grade to which temporarily appointed: And provided further, That no officer holding temporary rank under the provisions of this Act shall be eligible to command outside his own corps except by seniority under his permanent commission.

Sec. 5. The President is hereby authorized, by and with the advice and consent of the Senate, to appoint from among the permanent colonels and lieutenant colonels of the Air Corps who are "flying officers" as defined herein, or as may hereafter be defined, a commanding general of the General Headquarters Air Force with the rank of major general, and such number of wing commanders with the rank of brigadier general as may be determined by the Secretary of War. Officers temporarily appointed under the provisions of this section shall hold such temporary appointments until relieved by order of the President. Such temporary appointments shall not vacate the permanent commissions of the appointees nor create vacancies in the grades in which they are permanently commissioned: Provided, That the provisions of this section shall not be construed to exclude the assignment to Air Corps tactical or other appropriate commands of qualified permanent general officers of the line who are "flying officers" as defined herein, or as may hereafter be defined.

The Senate Bill is now under consideration by the Military Affairs Committee.

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MOSAIC OF SUMMER MANEUVER CAMP

Two members of the 21st Photo Section at Scott Field, Belleville, Ill., 1st Lieut. Kurt M. Landon and Master Sgt. N.G. Loupos, departed in the C-8 Photo plane on April 13th for Camp Custer, Mich., for the purpose of photographing a 20 mile by 30 mile area in order to make a mosaic map for use by the Second Army in this summer's maneuvers. A new five-lens camera, known as the T3A, is being used. This camera photographs approximately 15 square miles at each shot.

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COMMENDABLE CONDUCT OF TWO ENLISTED MEN

The Marmon-Harrington wrecker used by Hamilton Field, Calif., recently caught fire five miles east of Bakersfield, Calif. At great risk to their personal safety, Corporal Harry E. Brosius and Private Lester H. Horning, both of them members of the 70th Service Squadron, extinguished the flames, thereby saving the truck and the majority of the supplies it contained.

"The manner in which Corporal Brosius and Private Horning performed this duty," says the News Letter Correspondent, "is a credit to the 70th Service Squadron." These two enlisted men received special commendation from the 7th Bombardment Group Commander for their attention to duty and excellent judgment.

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MEXICAN ARMY PILOTS VISIT KELLY FIELD

A group of eleven Mexican Army officers, headed by Colonel A.G. Castrejon, and one Sergeant, visited Kelly Field on April 19th. The group, which was on an official flight from Mexico City, landed at Nuevo Laredo on Friday, and were brought to Randolph Field for the week end.

At Kelly Field the visitors were met by the Commandant and Secretary of the Advanced Flying School and were taken on a tour of inspection of the post. They visited the camera obscura range, post operations, and inspected the airplanes in use for training at this school. They departed at noon on a motor return trip to Laredo.

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THE WOODMAN HAS SPARED THIS TREE

The venerable holly tree, mentioned in the previous issue of the News Letter as being moved from its former position on the bank of the Potomac River to a site adjacent to the Officers' Mess at Bolling Field, is now in place. The old tree, aside from being a rare specimen, is exceptionally well developed and contributes not a little to the beauty of the surrounding area. Tradition has it that this tree has been on the river bank since the days of George Washington.

The moving of the holly tree is the largest item in a sweeping campaign of landscaping now being carried on at Bolling Field. Hundreds of shrubs, small trees and flowering plants are being set out over the entire post, with the center of concentration the areas about the new quarters.

BIOGRAPHIES

LIEUT.-COLONEL DAVENPORT JOHNSON, A.C.

Lieut.-Colonel Davenport Johnson, Air Corps, who is nearing the completion of his four-year detail as a member of the War Department General Staff, became affiliated with aviation on February 11, 1916, when, as a 2nd Lieutenant, 19th Infantry, he reported to the Signal Corps Aviation School at San Diego, Calif., for flying training. Following the completion of the flying course he was, on October 16, 1916, rated a Junior Military Aviator.

Col. Johnson was born at Tyler, Texas, March 28, 1890. He graduated from the U.S. Military Academy in 1912, was commissioned a second lieutenant and assigned to the 19th Infantry. He served with this regiment at Fort Sheridan, Ill., from September, 1912, to February,1913; and at Galveston, Texas, during most of the time from February, 1913, to September, 1915. He was with the regiment from April 16, 1914, to November 15, 1914, during the American occupation of Vera Cruz, Mexico; was attached to the 22nd Infantry at Naco, Arizona, December 15, 1914, to February 1, 1915, and was stationed with the 19th Infantry at Fort Sam Houston, Texas, from September,1915, to February, 1916.

On September 20, 1916, Col. Johnson was assigned to duty as pilot with the 1st Aero Squadron at Columbus, New Mexico. Eight days later, this organization proceeded into Mexico as a part of the Punitive Expedition under General Pershing. Returning to American territory December 15, 1916, he served at Fort Sam Houston until March 11, 1917. He was then ordered to France to study the methods employed by the French in training their aviation, and arrived in that country on April 5th, just a day before the United States declared war against Germany. While in France he took courses in various French schools of aviation. At his own request, he was assigned to duty with a French Pursuit unit in order to gain a thorough knowledge of the work, and he was one of the first pilots of the American Air Service to perform service at the front. Later, the French Government conferred upon him the Croix de Guerre with bronze star, the citation accompanying same being as follows:

"Highly conscientious officer and of magnificent bravery. Having come for trial in a French escadrille, he has insisted on taking part in all the patrols of that squadron and has besides made a great number of voluntary patrols, thus setting the very best example of enthusiasm and scorn of danger."

Col. Johnson continued his flying activities over the enemy lines until the signing of the Armistice. As Commanding Officer of the 95th Aero Squadron, 1st Pursuit Group, from March to July,1918, by his knowledge of Pursuit Aviation, by his loyal support of the Group Commander, and by his untiring efforts with his own organization, he was to a great extent responsible for the success of American Pursuit Aviation. He organized and commanded the 2nd Pursuit Group until April 3, 1919, and to his leadership may be attributed the remarkable record of that organization.

On November 5, 1918, while returning from an inspection flight supervising the work of his Group, Col. Johnson saw an Allied plane over the Forest de Woevre being persistently attacked by a patrol of two enemy Fokkers. Well knowing that enemy reinforcements were close at hand, while he was alone and well within the enemy lines with his gas tank low, he did not hesitate to sacrifice himself to enable the Observation plane to escape. He fearlessly attacked the patrol, keeping both enemy planes engaged even after both of his machine guns had become jammed and, after becoming satisfied that the Observation plane had reached the American lines, managed to make his escape after great difficulty.

Col. Johnson's first assignment, following his return to the United States, was as Commanding Officer of the 1st Pursuit Group at Selfridge Field, Mich., from June 9 to August 28, 1919. He then commanded Kelly Field, Texas, to March 1, 1920, when he was transferred to Langley Field, Va. He served as Operations Officer at that field for three months, and then in the capacity of student officer and instructor at the Field Officers School until July, 1922.

Stationed at Mitchel Field, L.I., for the next three years, he commanded the 1st Aero Squadron in addition to performing various other duties. In September, 1925, he was detailed as a student at the Command and General Staff School, Fort Leavenworth, Kansas, and upon his graduation therefrom in June, 1926, returned to Langley Field for duty as Instructor at the Air Corps Tactical School. He attended the Army War College, Washington, D.C., August, 1928, to June, 1929; was on duty in the Training and Operations Division, Office of the Chief of the Air Corps, from July 1, 1929, to February 22 , 1930, and then assumed command of the 3rd Attack Group at Fort Crockett, Galveston, Texas. In July, 1932, he was detailed to his present duty as a member of the War Department General Staff, Washington,D.C., in the G-2 Division.

Col. Johnson's flying time has exceeded the 2600-hour mark. He reached the rank of 1st Lieut., July 1, 1916; Captain, May 15, 1917; Major, July 1, 1920, and Lieut.-Colonel, August 1, 1935.

LIEUT.-COLONEL GEORGE H. BRETT, A.C.

A graduate of the Virginia Military Institute in 1909 as Electrical Engineer, Lieut.-Colonel George H. Brett, Air Corps, who was born in Cleveland, Ohio, February 7, 1886, received an appointment on March 10, 1910, as a 2nd Lieutenant of the Philippine Scouts. On August 11, 1911, he was commissioned a 2nd Lieutenant, U.S. Cavalry, and he served in that arm until the latter part of 1915, when he was detailed in the Aviation Section, Signal Corps, for flying training. He qualified for the rating of Junior Military Aviator, received this rating September 2, 1916, and the rating of Military Aviator exactly three years later.

From September 1, 1916, to September 5, 1917, Col. Brett was on duty as aviation representative in the Finance and Supply Divisions, Office of the Chief Signal Officer, Washington, D.C. He was then ordered to duty overseas and performed various functions connected with the purchase, receipt, storage, handling and distribution of all materiel for the Air Service in France. During November and December, 1917, he was on duty at the Headquarters Air Service, Lines of Communication, A.E.F. From January 1 to February 27, 1918, he was Assistant Chief of Materiel Division, Supply Section, Air Service, Service of Supply, A.E.F., and then Chief of that Division to the end of July, when he returned to the United States for temporary duty for the purpose of purchasing and collecting materiel necessary for the Air Service. Returning to France on September 23rd, he was on duty for several weeks in the Office of the Chief of Air Service, A.E.F. During November, he commanded several rest camps in England, and then returned to the United States, assuming command of the Aviation General Supply Depot at San Antonio, Texas, on December 21,1918.

On February 24, 1919, Col. Brett became Supply Officer at Kelly Field, Texas. On July 7, 1919, he was assigned to duty as Equipment and Engineering Officer in the Office of the Department Air Service Officer, Southern Department, Fort Sam Houston, Texas.

Transferred to Morrison, Va., October 29, 1919, Col. Brett functioned as Commanding Officer of the Aviation General Supply Depot at that place until December 1, 1919, and then proceeded to Washington, D.C., for duty in the Office of the Director of Air Service, where he served as Chief of the Inventory Section, Property Division, to April 19, 1920; also as Assistant Chief of the Materiel Section to February 11, 1920, and Chief of that section to September 3, 1920. From that date until October 28, 1920, he was Assistant Chief of the Property Division; Acting Chief to February 2, 1921, and Chief of the Property Division to September 30, 1921.

Transferred to Crissy Field, Presidio of San Francisco, Calif., October 6, 1921, Col. Brett was in command of this post until March 2, 1924. During a considerable part of his tour of duty at Crissy Field he also commanded the 91st Observation Squadron, and for brief periods on several occasions he served as Acting Air Officer of the 9th Corps Area.

For the next 3½ years, Col. Brett was on duty as Chief of the Field Service Section, Air Corps, at Fairfield, Ohio. In August, 1927, he was detailed as student at the Air Corps Tactical School at Langley Field, Va. His graduation in June of the following year was followed by further duty as a student at the Command and General Staff School at Fort Leavenworth, Kansas, where he completed the two-year course in June, 1930.

Pursuit aviation claimed Col. Brett's attention during the next three years, when he commanded Selfridge Field, Mt. Clemens, Mich., the station of the First Pursuit Group. In August, 1933, he returned to Fort Leavenworth, Kansas, where for two years he was on duty as Instructor at the Command and General Staff School. In August, 1935, he was assigned to his present duty as a student at the Army War College, Washington, D.C.

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AIR CORPS EXTENDS AID TO FLOOD SUFFERERS

During the recent flood in the State of Pennsylvania, the 2nd Bombardment Group, Air Corps, Langley Field, Va., pursuant to verbal orders of the Commander of the 2nd Wing, prepared to take the field for operations involving the dropping of food and medical supplies to communities in Pennsylvania cut off by floods from ground aid. Forty-five officers and 97 enlisted men were placed on alert status, and a total of 30 airplanes held on the line for take-off.

Major Robert T. Cronau, Air Corps, was placed in command of this detachment and selected the following staff: Captain R.E. Nugent, Adjutant; Captain R.E.L. Choate, Operations; Captain F.E. Glantzberg, Engineering; 1st Lieut. W.H. Higgins, Communications, and Captain D.D. Fisher, Supply. On March 19th, at 3:30 p.m., verbal orders of the Wing Commander directed a flight of eight B-10B airplanes, with necessary personnel, to proceed to Aberdeen Proving Ground, Md., the following day, thence with supplies to be furnished at that point to proceed to Renova, Pa., for the purpose of dropping same to flood sufferers in that community.

All missions were successfully executed, and approximately 8,000 pounds of supplies were dropped.

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OBITUARIES

A distressing airplane accident on the night of April 5th, near Fredericksburg, Pa., resulted in the death of five members of the Air Corps who were stationed at Langley Field, Va., one being a Reserve officer, one a Flying Cadet and three enlisted men.

Second Lieut. Stetson M. Brown, Air Reserve, with Flying Cadet Paul E. Amspaugh, Staff Sergeant Ernest B. Endy, Privates Arthur Samuel Metz and Peter J. Yost, as passengers, took off from Pottstown, Pa., at 7:30 p.m., clearing for Langley Field, Va., and encountered a severe rain storm near Harrisburg, Pa.

Fearing the rain might affect his radio, the pilot attempted to make a landing at both the Middletown and Harrisburg airports, but the recent floods in this section had wiped out all night flying facilities, so he was unable to secure the position of either airport. The crash occurred against the crest of a mountain as he was losing altitude around a beacon in the vicinity of Fredericksburg, Pa.

Lieut. Brown was born at St.Johnsbury, Vt., June 20, 1910. After graduating from the St. Johnsbury Academy he entered Norwich University, Northfield, Vt., and graduated therefrom with the degree of B.S. in Electrical Engineering.

Appointed a Flying Cadet in the Air Corps, he graduated from the Primary Flying School, Randolph Field, Texas, in October, 1934, and from the Advanced Flying School, Kelly Field, Texas, in February, 1935, specializing in Bombardment Aviation and receiving the rating of Airplane Pilot on February 28th.

Assigned for further training under his Cadet status to the 20th Bombardment Squadron, Langley Field, he completed this year of additional training on February 29, 1936, whereupon he was commissioned a second lieutenant in the Air Reserve, and continued on active duty with the above mentioned squadron.

Flying Cadet Amspaugh attended Fenn College, Cleveland, Ohio, from 1928 to 1933, graduating with a degree of Bachelor of Science. He entered the military service in the March, 1934, class at Randolph Field, but due to an accident and a subsequent operation he graduated with the following class in June, 1935. Upon completing the advanced flying course at Kelly Field, he was assigned under his Cadet status to duty at Langley Field and attached to the 37th Attack Squadron, GHQ Air Force, until January 21, 1936, when he was attached to the 36th Pursuit Squadron, GHQ Air Force.

Staff Sergeant Endy was born in Boyertown, Pa., October 28, 1904. He enlisted in the Air Corps on April 3,1926, and served continuously in this branch of the service. He was appointed Corporal in July, 1929; Sergeant in July, 1930, and Staff Sergeant in July, 1931. In 1927 he completed a course of instruction at the Air Corps Technical School at Chanute Field, Rantoul, Ill.

Sergeant Endy served with the 94th Pursuit Squadron at Selfridge Field,Mich., the 2nd Observation Squadron in the Philippines, the 99th Observation Squadron at Mitchel Field, N.Y., and the 20th Bombardment Squadron at Langley Field.

Privates Metz and Yost were also members of the 20th Bombardment Squadron at the time of the accident. The former was born at Chambersburg, Pa., May 7, 1910, and enlisted in the Air Corps November 15, 1928. Previous to his assignment to the 20th Bombardment Squadron, he served for five years with the 59th Service Squadron, Langley Field. Attending the Air Corps Technical School, Chanute Field, in 1931, he graduated as an airplane mechanic.

Private Yost, whose home was at McKees Rock, Pa., entered the military service on October 16, 1933, and was assigned to the 20th Bombardment Squadron. In January, 1935, he graduated from the Air Corps Technical School as Supply and Technical Clerk.

The Air Corps extends its depest sympathy to the relatives of the deceased men.

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ATTACKERS WORK WITH INFANTRY AT FT. MEADE

A flight of three A-8 Attack airplanes from the 37th Attack Squadron, Langley Field, Va., recently flew a contact liaison and attack mission with Infantry and tanks at Fort Meade, Md. The contact plane kept the ground troops well informed as to the positions of the enemy,their strength and threatened objectives.

With clock like precision the flight changed from Attack to Observation and back to Attack as the missions required.

The problem was brought to a close by a dense F.S. smoke laid down by two A-8's which obscured the disputed area. The demonstrations made a favorable impression on the ground troops, who showed much interest in the inspections of the aircraft. Major Ned Schramm, commanding the flight, gave a very interesting talk on the purpose and scope of Attack Aviation. The remaining personnel of the flight assisted in answering the usual questions asked by the ground troops.

This mission was regarded as exceptionally instructive by the participating ground personnel.

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The landscaping project now in progress at Bolling Field, D.C., includes grading, levelling and seeding [illegible] grass over the unsightly spots left by building operations.

HOW ENGINES ARE PROCURED AND TESTED FOR AIR CORPS USE

By the Materiel Division Correspondent

PROCUREMENT and type testing of Air Corps engines are accomplished by the Materiel Division at Wright Field, Dayton, Ohio. The test is conducted by the Power Plant Branch. The total running time is 150 hours, and at present is the only official test imposed on models of engines prior to their preparation for service use.

There are three specifications which apply to engines procured by the Army. The first is a General Engine Specification. This pertains to parts that are common to all Air Corps engines, such as generators, starters, gun synchronizer drives, etc. The second is the Type Specification, which applies to all engines of the same type, namely: V-1570, R-1535, R-1820, etc. The last is the Model Specification, and is the one submitted by the engine manufacturer to the airplane manufacturer. This specification is a guarantee of performance of a particular model of engine, and is a basis on which the airplane manufacturer bases his guaranteeded airplane performance.

Let us assume then that an airplane manufacturer has been awarded a contract for a number of planes to be powered by a particular engine. The specification he has submitted for these planes includes the Model Specification of the engine as outlined above. Before the planes are purchased, the engine must satisfactorily pass the 150-hour Air Corps type test at powers in accordance with those outlined in the Model Engine Specification. This test is substantially as follows: The engine is first photographed and weighed. If not already accomplished by the manufacturer, the cylinder and piston ring tensions and measurements are taken. Thermocouples are installed on all cylinder heads and bases. After shop work is completed, the engine is placed on a water brake and electric dynamometer, where accurate measurements of power, manifold pressure, temperature, speed, fuel and oil consumption, can be made. The engine is calibrated and torque stand control data procured. The calibration is a check against the manufacturer's Model Specification guarantee.

The endurance test is run on a torque stand, which is nothing more than a mount, suitable for use with a propeller. The test consists of 150 hours of running in the following manner:

(1) 40 hours of normal rated sea level power at normal rated speed.

(2) 10 hours at critical altitude power and speed.

(3) 25 hours at 97 per cent speed and 91 per cent power.

(4) 25 hours at 93 per cent speed and 80 per cent power.

(5) 25 hours at 89 per cent speed and 70 per cent power.

(6) 15 hours of five-minute periods of alternating take-off power and speed and idling.

(7) 10 hours at rated power and 110 per cent speed.

(8) 10 dive tests of 20 seconds each at 105, 110, 115, 120 per cent normal rated speed; and, in addition, for engines to be used in Pursuit ships, at 125 and 130 per cent normal rated speed. All dive tests are run at normal rated manifold pressure.

During the test, readings of manifold pressure, speed, cylinder temperature, fuel and oil consumption, are recorded at fifteen-minute periods. In the event of a failure of a major part, a new part may be installed and the test continued with the new part being subjected to a penalty run equal to the time covered by the engine prior to failure.

Upon the completion of the endurance test, the engine is returned to the dynamometer, where it is re-checked for power, to determine the power change during the endurance test. After calibration, the engine is completely disassembled and inspected. Each part is gone over carefully to disclose any cracks, scuffs, or other signs of excessive wear. Measurements are taken of rings and cylinders and checked against those made prior to test.

If all is considered satisfactory, the engine is approved.

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ASST. SECRETARY OF WAR FLIES IN PANAMA

During his recent inspection and visit to the Panama Canal Department, the Hon. Harry H. Woodring, Assistant Secretary of War, and his party, were on March 29th flown in an OA-3 Amphibian plane from Albrook Field to Puerto Aemuelles, Republic of Panama. Captain C.A. Ross, of Albrook Field, was the pilot. The OA-3 was escorted by two O-19 airplanes piloted by Lieut.-Colonel Donald P. Muse, of Albrook Field, and Lieut. George G. Northrup, of France Field.

Puerto Aemuelles is located just south of the Panama-Costa Rica border on the Pacific Coast line. There is a large banana plantation located here, owned and operated by the United Fruit Co. Upon arrival, Secretary Woodring and his party were taken on an inspection tour of the plantation, where the method of cutting, carrying and loading of bananas was demonstrated. The party were guests of Mr. Blair, manager of the plantation, for lunch, and returned to Albrook Field in the afternoon.

NAVIGATION AIDS IN B-10 AND B-12 AIRPLANES

By Captain Norris B. Harbold, Air Corps

SINCE the 19th Bombardment Group was assigned the mission of adapting existing equipment to celestial navigation, and since this Group was equipped with B-10 airplanes, considerable thought and effort have been devoted to the installation of navigation equipment in this type airplane.

In the installation of additional equipment or in adapting existing equipment, no changes were made in basic arrangement or function of the airplane, and installations do not interfere with the armament or controls of the airplane. These changes, as made, are considered adaptable to B-12 and B-10B airplanes and do not require special materials nor tools and can be effected by a service squadron.

In any navigation, dead reckoning is basic, and it was in providing instruments for dead reckoning that most difficulties were encountered. The equipment deemed necessary for dead reckoning consisted of the following: Aperiodic Compass, Type D-4; Turn Indicator, Type B-2, with remote control; Drift Sight; Navigation Table and seat; and Navigation Case.

Proper compass installation was the hardest problem. Installation near the fuselage side in the rear cockpit developed strange unpredictable deviations believed caused by magnetization of rudder cables and by vibration. The compass was finally installed on the floor on a square base mounted on four Lourd shock absorbers of 4-lb. size.

The B-2 Type Turn Indicator is the only type permitting remote control of the lubber line. Only a few B-2 Turn Indicators were available, but those installed required a 20 ft. length of flexible shaft to permit installation of the remote control knob near the compass. In those airplanes not having a B-2 Turn Indicator, voice communication (interphone) is used to direct the pilot to the proper heading.

A D1-A drift sight was installed on the right side of the rear cockpit. Several places were tried, the best being that which was accessible to the navigator when seated and which kept the mechanism which turns the grid inside the fuselage. The installation did not interfere with the controls.

It was found possible to obtain excellent drift reading with the bomb sight even at altitudes of 5,000 to 8,000 feet over smooth water. This required practice, however, and focussing of the eye by means of fairly long observation. No great success has yet been obtained in securing ground speed readings with this sight. The bomb sight pilot director has also been used for navigation purposes. Although some precession was encountered, this method may develop into an easier and better means of pilot direction than by the gyro turn indicator.

A small folding table equipped with an Aircraft Protractor (small universal drafting machine) was installed on brackets placed on the rudder heel rests in the rear cockpit. This installation likewise did not interfere with the controls and can be removed and placed to one side, permitting free passage under the control column in the rear cockpit.

The seat provided in the rear cockpit of the B-10 airplane was found to be highly magnetic and to have considerable effect upon the compass when down. This seat was also too high to be used with desk or the compass as installed. Consequently, a small, folding, wooden bench was built which mounts 19 inches off the floor of the rear cockpit. This seat may be folded and placed on the floor when not in use. The metal seat installed in the airplane can still be used when necessary.

A number of Navigation Instrument Cases equipped with necessary instruments and paraphernalia have been tried. The adaption of a standard case suitable for any multi-place airplane has been recommended This case consists basically of a separate kit, 10" x 12", with suitable exposed pockets for dividers, pencils, computers, etc., and an ordinary brief case. All books, tables, forms, and maps not in use can be placed in the brief case while the small kit can be hung up in some convenient place and be readily available to the navigator.

The aircraft protractor mentioned in conjunction with the folding table has been found indispensable for dead reckoning and celestial plotting. The type in use is the aircraft navigation protractor, Elgin, Part No. E-6280. However, any type of small universal drafting machines with arms 8 to 12 inches long, with 360° protractor head and blank scale (preferable), can be used. A protractor of this kind facilitates the work of plotting considerably.

A shallow aluminum box should be provided for the aircraft sextant. This box can be mounted on the fuselage side in some convenient location available to the navigator. This box should be secure and should be lined with felt rubber. If the A-6 type navigation watch is used, a similar box should be provided; however, the wrist type A-7 is considered sufficiently reliable for missions of duration of range of present aircraft and requires no box, as it is carried on the person.

Since the bomb sight installation has been changed to the nose in these air-

(Continued on page 16)

QUESTIONS AND ANSWERS

Q. Why should Air Corps officers on flying duty receive extra pay?

A. In answering this question people outside the Air Corps, who do not fly, usually assign as the reason the hazardous nature of the duty, involving increased risk to life over and above that of other peace time Army occupations. Air Corps fliers probably think first of another reason. They feel that the extra pay is, in part, compensation for special ability to do that which the great majority of people are unable to do. The Army's requirements for physical fitness to take flight training eliminate about eighty percent of all who apply for it. The flight training itself eliminates fifty percent of those who take the training; so that only ten percent of those who want to fly in the Army qualify as pilots. It is natural, therefore, for Army pilots to feel that they are specialists of a rather high order. Perhaps they might be compared in this respect with major league baseball players or even Hollywood movie stars. They are able to do something most of the other folks cannot do; and since this special ability is needed by the country it is only fair that it should be paid for.

Of course, Air Corps fliers recognize the hazards of flying and the need to make special provision for their families. This provision involves greatly increased outlay on their part for insurance, since insurance companies charge high extra premiums for covering the aviation risk. The extra pay is needed to defray this added expense to fliers.

Some reviewers who have studied this subject have arrived at the conclusion that flying is growing safer year by year, as proven by the fatality records, and that for this reason the amount of extra pay should be reduced. This is only partially true as regards Army flying. It is true that more hours are flown for each fatality. However, a great many more hours of flying per officer are required, and because of this the percentage of fatalities among Air Corps officers remains about the same. Other factors these reviewers have failed to evaluate are the high type of pilot ability and the splendid morale of the fliers who have made this improved safety a reality. The extra pay undoubtedly plays a significant part in attracting to the flying profession the present high type of men who are engaged in Army, Navy and air lines flying. And it is these fliers who have piled up the huge total hours of flying which is directly responsible for contributing the flying proficiency and the advance in structural integrity and reliability of equipment which has made possible improved safety.

In flying one of the large, costly modern airplanes the individual actions of the pilot are completely responsible for the safety of the whole craft to a degree which does not obtain in the operation of any similar surface craft. It is true economy, therefore, to have a highly competent pilot. And competency in such a specialized calling deserves an appropriate reward in the matter of salary. The air lines have recognized this and require the pilots of their large airplanes to have a minimum of one thousand hours flying time; and they pay them higher salaries than Air Corps pilots receive. A comparison made on data only partially complete for air line pilots, but believed to be fairly representative, gives an average monthly pay for airline pilots of $569.68 per month as opposed to an average pay, including flying pay, for Air Corps pilots of $391.70 per month.

When it is considered that Air Corps pilots are trained to fly in close formations, to carry high explosives in their airplanes, to practice very low and very high flying, to fly over unmarked and unlighted courses at night, and, in general, to obtain the absolute maximum of performance from their airplanes in order to cope on favorable terms with their opponents in war, it is believed the question of their extra flying pay is largely answered.

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LIGHT PLANE TESTED AT BOLLING FIELD

The Bureau of Air Commerce, Department of Commerce, has been conducting exhaustive tests at Bolling Field, D.C., on the new Hammond "Y" light airplane, built by the Hammond Aircraft Company of Ypsilanti, Mich., for the "flivver plane" project being sponsored by the Bureau.

The new ship, of unique design, is of the pusher type, two place, and is powered by a 125 H.P. Menasco in-line engine. Cooling is accomplished by an efficient tunnel cowl, and with the power plant now used the ship cruises at nearly 100 miles per hour. The landing speed, with flaps down, is reported as practically nil, and landing and take-off runs are surprisingly short. The Bureau of Air Commerce hangar crews, who nurse the little ship, are enthusiastic.

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Selfridge Field, Mich., was honored by a visit from Major-General Frank M. Andrews, Chief of the GHQ Air Force, who arrived on the afternoon of April 7th from Langley Field, Va. After an inspection of post activities, the General departed for Wright Field, Dayton, Ohio, on the afternoon of April 8th.

Navigation Aids (Continued from page 14)

planes, it is no longer possible for the navigator to function as bomber. If three of the crew are officers, bomber, pilot, and navigator, no difficulties are encountered. However, if the officer crew is reduced to two, with the compass in the rear, the enlisted crew man must be instructed in setting the compass as directed by the navigator and in keeping the pilot on the proper heading by means of the remote control or by voice (inter-phone). This has not proven altogether reliable, but is the only means possible without a fully trained crew. With a trained enlisted bomber, no difficulties are encountered, as the navigator can be an officer.

To provide emergency communication between the radio operator, or navigator and the pilot, a pulley system was installed so that written communication could be maintained between these stations.

One of the plasticelle panels in each side of the rear cockpit enclosure was removed and glass inserted. This was done to permit better vision when taking celestial observations. Refraction errors due to the glass or plasticelle may or may not be present, but the error due to this refraction is not considered sufficient to disturb the accuracy possible from air observations.

Compass compensation in the B-10 airplane presented many difficulties. The effect of retractable wheels, radio, and the weight and size of the airplane made ground compensation difficult and not in conformance with conditions of flight. Swinging in the air was therefore tried with good results. However, in this swinging, the dynamotor for the radio set in the rear of the B-10 was turned off when readings were made in flight.

This air swinging consists basically of determining the sun azimuths at predetermined times and aligning the airplane in flight with these azimuths by shadows. The airplane is then turned to the magnetic headings by reference to the gyro and the compass readings taken. Compensation by magnets is not performed. The deviations are determined by drawing a mean curve for the headings as determined in flight, and a deviation card made. The use of magnets was impracticable, and deviations as determined did not exceed four degrees. Before air swinging, the lubber line error was removed by swinging on the ground. Detailed instructions on air compensation are being prepared and will be submitted for approval and publication as a T.O. or for inclusion in the navigation text.

Naturally, this adaptation of equipment and the method of air swinging is not final nor perfect, but it does represent considerable thought and effort already expended and should prove a basis for further development. This installation is fairly comfortable, and the results obtained have been gratifying.

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STUCK IN THE MUD HEAD FIRST

Lieut. William J. Bell, on duty with the 1st Pursuit Group at Selfridge Field, Mt. Clemens, Mich., was the victim of a peculiar accident on April Fools' Day. While making a return flight from Chicago, he encountered a local storm near Jackson, Mich., and, after endeavoring to push through it for several minutes, decided to return to the Jackson airport and land. After turning, his engine dropped to about 1400 r.p.m., at full throttle, and the air speed fell to about 110 miles per hour. This caused him to decide to land in the first available field.

Selecting a field near the Jackson Prison which appeared to be level and firm, he made a landing and, after rolling but a few feet, the plane flopped over on its back in the soft mud. The edges of the cockpit were on the ground, and the entire headrest sank in the mud, with the result that Lieut. Bell was imprisoned in the cockpit upside down.

Following about ten minutes of effort, Lieut. Bell was able to remove his parachute and turn around in the cockpit so that he was upright and on hands and knees. He remained in this position about ten more minutes until several farmers passing on the nearby road came to his assistance and lifted the tail of the plane sufficiently to permit him to crawl out.

Due to the softness of the ground, the damage to the airplane was not as great as was expected, and the airplane has been shipped to the Fairfield Air Depot for overhaul.

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POST EXCHANGED MOVED TO NEW BOLLING FIELD

The Post Exchange and Restaurant at Bolling Field, D.C., were recently moved to new, spacious quarters in the gymnasium building on the new field area. The new location constitutes a vast improvement over the older cramped building formerly occupied. Along with the change in location, the restaurant is being splendidly equipped with the latest type of fixtures and will soon be in a position to offer the finest type of service.

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Twenty-three PB-2A airplanes are to be delivered to the 1st Pursuit Group at Selfridge Field, Mich., in the next six weeks from the Consolidated Aircraft Corporation, San Diego, Calif. Four ferry pilots have already departed for San Diego to accept delivery of these planes. The Group will be equipped with approximately 75 Pursuit planes upon delivery of these new planes.

AIR CORPS MAY SECURE ADDITIONAL OFFICERS

IN Circular No. 20, War Department, April 10, 1936, announcement is made that, provided funds are made available under the current War Department appropriation act, there will be an examination of applicants for the appointment of 50 second lieutenants in the Air Corps, Regular Army.

Although fifty appointments, apportioned to the various arms, are authorized to be made annually, the entire allotment of 50 vacancies is awarded to the Air Corps for this year, since none of the group of 1,000 Reserve officers authorized for active duty for one year with the Regular Army could be eligible for appointment prior to July 1, 1937.

These fifty appointments are limited to graduates of the Air Corps Training Center only. Applications from graduates now in active military service and from those Flying Cadets who will graduate from the Air Corps Training Center on June 30, 1936, should be submitted to the Corps Area and Department Commanders through channels, in accordance with Section III, AR 605-5, not later than May 15, 1936. Candidates not now in active service will submit their applications to the station at which they last served. A candidate who has had no extended active duty with the Air Corps should submit his application to the Commandant of the Air Corps Training Center.

The preliminary examination of candidates is to be completed not later than July 1, 1936. Part I of the final examination is to begin July 27th, and part II, July 30, 1936. Eligibility to compete in the final examinations will be confined to qualified pilots who -

a. Fulfill the necessary mental, moral and physical qualifications for appointment as second lieutenants in the Regular Army.

b. Are physically qualified for flying duty, and

c. Have not reached the age of 29 years and 9 months at time of final examination.

The final mental examination will be divided into Part I, which consists of elementary subjects, and Part II which consists of advanced subjects. Each candidate will be required to qualify either by examination or by an approved exemption in all subjects of Part I, as prescribed in paragraph 34b, AR 605-5. Each candidate will be required to qualify by examination in all subjects of Part II. No exemptions in Part II will be granted for any cause. The subjects of Part I will be those listed in paragraph 34b, AR 605-5. The subjects of Part II will be -

(1) Theory of flight
(2) Internal combustion engines
(3) Air Navigation, excluding celestial.

The scope of the examination in the subjects of Part II will be as follows:

(1) Theory of flight,- as covered by "Simple Aerodynamics" by Montieth and Carter, and those texts used at the Air Corps Training Center, or any other recognized textbook of equivalent standard.

(2) Internal Combustion Engines,- as covered by "The Airplane and its Engine" by Chatfield and Taylor, and those texts used at the Air Corps Training Center, or any other recognized textbook of equivalent standard.

(3) Air Navigation,- as covered by "Avigation" by Holland, and those texts used at the Air Corps Training Center, or any other recognized textbook of equivalent standard, excluding celestial navigation.

In each examination the candidate will require a fundamental knowledge of the principles of the subject sufficient to indicate his suitability as an officer of the Air Corps. A general average of 75 will be required in all subjects and a mark of not less than 65 in any one subject.

Candidates who are physically qualified and who attain the marks prescribed will be arranged on an eligible list in the order of their general averages. They will be selected from this list for appointment and placed on the promotion list arranged among themselves according to their prior active Federal commissioned service in the Army.

The purpose of this examination is to select the 50 best qualified applicants for appointment in the Air Corps, Regular Army. No additional credits for length of flying service are awarded and no priority in appointment will be granted to any graduate of the Air Corps Training Center by reason of enlisted or other status.

All applicants who are not in the active military service at the time of making application for examination will be required to demonstrate their proficiency as pilots before the board conducting the preliminary examination. Each examining board will submit a report showing the relative merit of these candidates as pilots.

RETIREMENT OF NONCOMMISSIONED OFFICERS

The following Noncommissioned officers of the Air Corps will be retired, effective April 30, 1936:

Warrant Officer Walter M. Phelps, Scott Field, Ill., after more than 32 years' service.

Master Sgt. Charles Feyk, 1st Bombardment Squadron, Mitchel Field, N.Y.

Master Sgt. Fred Carducci, 14th Photo Section, Mitchel Field, N.Y.

First Sgt. Ralph Baumgardner, 27th Pursuit Squadron, Selfridge Field, Mich.

CHANGES OF STATION OF AIR CORPS OFFICERS

To Office Chief of Air Corps, Washington: Major Robert Kauch, from Brooks Field, Texas.

To Randolph Field, Texas: Major Warner B. Gates and Lieut.-Col. William B. Mayer (Maj.) for primary flying training, upon completion of tour of duty in Panama.

To Rockwell Field, Calif.: Captain Russell J. Minty, from Wright Field, Dayton, Ohio.

Promotions:

Lieut.-Colonel Barton K. Yount to Colonel, and Captain Shiras A. Blair to Major, both to rank from April 1, 1936.

Change in Name

First Lieut. Robert Alan Stunkard to Robert Alan.

Retirement;

Colonel Ira Longanecker, April 30, 1936, for disability incident to the service.

Temporary Promotions:

To Captain

1st Lieut. Frederick W. Ott assigned as flight commander, 25th Bombardment Squadron, France Field, Panama Canal Zone, April 22, 1936.

1st Lieut. Chester P. Gilger assigned as supply officer, 65th Service Squadron, Luke Field, T.H., April 24, 1936.

1st Lieut. Harry G. Montgomery, Jr., assigned as flight commander, 32nd Bombardment Sqdn., March Field, Calif., April 28, 1936.

To 1st Lieutenant:

2nd Lieut. Frank N. Moyers assigned as Engineering Officer, 8th Attack Squadron, Barksdale Field, La., April 26, 1936.

2nd Lieut. Earl F. Signer assigned as supply officer, 4th Observation Squadron, Luke Field, T.H., April 24, 1936.

2nd Lieut. Cordes F. Tiemann assigned as armament officer, 50th Observation Squadron, Luke Field, T.H., April 24, 1936.

2nd Lieut. Jewell B. Shields assigned as supply officer, 19th Pursuit Squadron, Wheeler Field, T.H., April 22, 1936.

2nd Lieut. Sydney D. Grubbs, Jr., assigned as communications officer, 19th Pursuit Squadron, Wheeler Field, T.H., April 22, 1936.

2nd Lieut. Karl Truesdell, Jr., assigned as communications officer, 6th Pursuit Squadron, Wheeler Field, T.H., April 22, 1936.

2nd Lieut. Opal E. Henderson assigned as Adjutant, 18th Pursuit Group, Wheeler Field, T.H., May 1, 1936.

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The duties of the following-named Air Corps officers holding temporary increased rank were changed, these officers retaining their temporary rank. No change of station involved.

Major Walter Miller (Captain) from Executive Officer to Supply Officer, Air Corps Primary Flying School, Randolph Field, April 27, 1936.

Major Leonidas L. Koontz (Captain) from Supply Officer to Executive Officer, Air Corps Primary Flying School, Randolph Field, April 27, 1936.

1st Lieut. Thomas S. Moorman, Jr. (2nd Lt.) from supply officer, 4th Observation Squadron, Luke Field, T.H., to Communications Officer of that squadron.

THE COVER PAGE FOR THIS ISSUE OF NEWS LETTER

Featuring this issue of the News Letter is the first photograph ever made showing the division between the Troposphere and the Stratosphere and also the actual curvature of the earth. The area shown in this photograph, taken from an elevation of 72,395 feet, the highest point ever reached by man, is larger than the State of Indiana.

From its vantage point far up in the stratosphere, the camera has registered the horizon 330 miles away, sweeping like a great arch across the photograph. The straight black line has been ruled in to bring out clearly the curvature of this horizon, which is practically concentric with the earth's surface, and thus indicates the actual curvature of the earth.

This remarkable picture is most interesting to scientists as the first photograph yet secured showing the boundary between the troposphere (the dust-laden region of rising and descending air currents, of clouds and variable temperature) and the stratosphere (the region of nearly constant temperature, above dust and air turbulence).

The abrupt change from light to dark on the horizon marks the top of the "dust sphere," the meeting surface or boundary between the lower air (troposphere) and the stratosphere. Its height varies with the season, with the latitude and with weather conditions. On Nov. 11, 1935, over South Dakota, where this photograph was taken, this dust arc was approximately 37,000 feet above sea level. Although rising air currents are unable to penetrate this lower boundary to the stratosphere and to carry dust into it, volcanic eruptions have on rare occasions shot dust to tremendously greater heights.

The significance of the photograph is that both the camera and the target (the top of the "dust sphere") are in the stratosphere, that is, the line of sight is wholly through the stratosphere, 96% of the earth's atmosphere being below the camera when this picture was made. With only 4% of the earth's atmosphere above this height, and that essentially free from dust, there is little to scatter sunlight; consequently the upper sky is very dark.

The Big Horn Mountains of Wyoming and Montana, with patches of snow and dark forest, can be seen faintly near the horizon. The long, dark area in the middle ground is the Black Hills of South Dakota, more than 100 miles long, and from 120 to 180 miles away. The forest that covers the region gives the dark color and so camouflages its mountains that they are not distinguishable as such. The nearest objects in the foreground are more than 30 miles away. This picture shows more than the human eye saw. To the eyes of the balloonists the horizon was not clearly distinguishable. The earth and sky merged together in a band of white haze.

The News Letter greatly appreciates the courtesy of the National Geographic Society in granting permission to use this photograph. The rotorpress plate therefor was made at the Materiel Division, Wright Field. Mr. Bob Fitzgerald, of the Army Aeronautical Museum, took several liberties with the photograph, such as adding inserts of Captains Stevens and Anderson, also the stratosphere balloon. Our cordial thanks to all who had a hand in producing the cover for this issue.

AIR CORPS NEWS LETTER

THE NATIONAL GUARD AVIATION NUMBER

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT WASHINGTON, D.C.

MAY 15, 1936

VOL. XIX NO. 10

DUNNINGTON

VOL. XIX. **Air Corps News Letter** NO. 10

Information Division
Air Corps
May 15, 1936
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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GREETINGS FROM THE SECRETARY OF WAR

I have always sought to insure that the interests of the National Guard shall receive careful consideration in the formulation of War Department policies. I have been especially interested in the aviation of the National Guard, and I desire to express to the Governors, State Adjutants General and the commanders of the National Guard Divisions my appreciation for their cooperation with the War Department in securing suitable ground facilities for the aviation units of the Guard. Quarters, hangars, shops and servicing equipment now available permit efficient operation.

I have noted with satisfaction the high morale and efficiency displayed by the air squadrons during their annual encampments and exercises. The pilots of these squadrons have also made a distinct contribution to the national welfare by furnishing aid in flood relief, in searching for lost aviators, in obtaining weather data for the Weather Bureau, and in many other ways. The aviation activities of the National Guard have fully maintained the splendid tradition of readiness for service which the Guard as a whole has long supported.

I extend to the aviation personnel of the National Guard my heartiest congratulations upon the success you have attained and my best wishes for your further success.

Geo H Dern
SECRETARY OF WAR.

* * *

GREETINGS FROM THE CHIEF OF STAFF, U.S. ARMY.

I desire to extend warmest greetings to the aviation personnel of the National Guard and to felicitate you upon your record of achievement. It has been a pleasure to me to witness your steady growth in efficiency and to find you so successful in your efforts to obtain better airplanes and equipment for your squadrons.

Your accomplishments in improving the state of flying training in the units have been noteworthy. The increase in formation and cross country flying and in instrument and night flying has done much to add to your readiness for service in the field. It is a great satisfaction to know that you are so well prepared to share with the Air Corps the duty of providing aviation's contribution to National Defense.

I know the National Guard divisions all feel the greatest pride in their observation squadrons and I can assure you that the Regular Army is happy in the thought that these nineteen splendid units are available to support our operations.

Please accept my best wishes for your continued success.

Malin Craig
MALIN CRAIG,
Chief of Staff, U.S. Army.

34TH DIVISION AVIATION, MINNESOTA NATIONAL GUARD
(109th Observation Squadron)
Holman Municipal Airport, St. Paul, Minn.

IN July, 1920, Major Ray S. Miller, of St. Paul, Minn., gathered together several wartime and barnstorming pilots and formed the first National Guard Air Squadron in the United States. Today, Major Miller commands the development of that pioneer group, the 109th Squadron, 34th Division Aviation, which, in spite of hardships and vicissitudes, and through the splendid unselfishness of its personnel, has grown to its present enrollment of 22 officers and 95 enlisted men.

The home hangar of this Squadron is located at the Holman Municipal Airport in St. Paul. This excellent airport, named in memory of the late Charles "Speed" Holman, nationally famous flier of a decade ago and a home town boy, is located within the city limits of St. Paul, only one and one-half miles southeast of the court house and central business district.

The airport is desirably located within a horseshoe bend in the Mississippi River, on flat ground, nestling within encircling hills. The field, altitude 703', is earth-filled and is constantly being extended and improved under Government supervision. The improvement of the airport, in fact, is an adjunct of another important Government project in St. Paul, which is the practical head of navigation on the Mississippi River, namely, maintenance of navigation, as the earth pumped from the river bed to maintain the channel is used to fill in the airport extensions. At present, the field has two paved runways, 1600' by 150', and one turf runway N.W./S.E., 3600' by 600', and the usable area of the field is marked with boundary markers. The field is equipped with a code beacon flashing "S," flood lights, rotating beacon, and a teletypewriter operated by the Department of Commerce. Attendants are in charge day and night, the usual obstruction markers are furnished, and every facility for servicing aircraft is available 24 hours a day.

The Squadron hangar is 120' by 200' and includes, in addition to hangar space, a shop, garage, armory, administration office, officers' club room, shower and locker rooms for enlisted men and officers, and rooms for communication, photographic and medical sections. The flying equipment consists of Douglas O-38's.

Naturally, the Squadron in its long and eventful career has engaged in many flying activities, some of which were unusual and interesting in the extreme. For example, in 1922, the Squadron was on active duty for three months in the forest regions of northern Minnesota during the extensive fires, and took every advantage of the excellent opportunities afforded to engage in diversified types of flying under the most unusual conditions existent.

During National Maneuvers in 1931, Major Miller, Squadron Commander, was selected as group commander. Also engaging in the Maneuvers from the Squadron were Captain G.M. Palmer, Army Instructor; Captain A.W. Nelson, Operations Officer, and Lieuts. Thomas D. Lane and Hal S. Paul.

Weather conditions throughout the year in St. Paul are sufficiently diverse to afford the opportunity of flying under any conditions from the tropics to the Arctic. In the summer, temperatures range up to 106°, and in the winter down to 35° below zero. For a stretch of 35 days in January and February, 1936, the temperature was below zero every day and reached the frigid depth of 35° below. If the officers in the squadrons further south will couple that last statement with the fact that all our ships except one are open jobs, it will be quite apparent that, while we have our heat waves, we get an excellent opportunity to cool off. However, under the most inclement weather conditions, the drill attendance percentage has kept up remarkably well.

The latch string is always out at the Squadron headquarters for visiting fliers, and don't forget that, since we are practically downtown with our airport, the most dangerous hazard of the trip, the ride from the field to the hotel, is practically eliminated.

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RECOGNITION OF NATIONAL GUARD SQUADRONS

The 19 National Guard Squadrons were Federally recognized on dates given below:

Squadron	Division	State	Date
109th	34th	Minnesota	Jan. 17, 1921
104th	29th	Maryland	June 29, 1921
101st	26th	Mass.	Nov. 18, 1921
105th	30th	Tennessee	Dec. 4, 1921
113th	38th	Indiana	Aug. 1, 1921
106th	31st	Alabama	Jan. 21, 1922
102nd	27th	New York	Nov. 4, 1922
110th	35th	Missouri	June 23, 1923
120th	45th	Colorado	June 27, 1923
111th	36th	Texas	June 29, 1923
118th	43rd	Conn.	Nov. 1, 1923
115th	40th	Calif.	June 16, 1924
103rd	28th	Penna.	June 27, 1924
116th	41st	Wash.	Aug. 6, 1924
154th		Arkansas	Oct. 24, 1925
107th	32nd	Michigan	May 7, 1926
112th	37th	Ohio	June 20, 1927
108th	33rd	Illinois	July 1, 1927
119th	44th	N.J.	Jan. 1, 1930

GREETINGS FROM THE CHIEF, NATIONAL GUARD BUREAU.

The National Guard is proud of its air units. The state of training and the esprit of its nineteen squadrons measure up to those fine standards and traditions established by the airmen of the Regular Army. This is not surprising, since some fifty percent of our flyers won their wings at the Air Corps Training Center, while the remainder proved their right to fly in the rigorous schools of the great commercial lines or during the World War.

Well do we realize, however, that these things alone cannot account for the outstanding efficiency of our air units. To the Regular Air Force for its consistent cooperation and helpfulness must go a large share of the credit. Probably in no other arm or service does such intimate liaison exist. The results attained in this instance should prove a beneficial object lesson to both the National Guard and the Regular Army.

I congratulate the officers and men of the National Guard aviation units on their high morale, their unselfish devotion to duty, their loyalty, and their keen desire to serve the best interests of their State as well as the nation as a whole, and I extend my best wishes for their future well being.

Albert H Blanding

MAJOR GENERAL
CHIEF, NATIONAL GUARD BUREAU.

29TH DIVISION AVIATION, MARYLAND NATIONAL GUARD
(104th Observation Squadron)
Logan Field, Baltimore, Md.

THE 29th Division Aviation, the eyes of "The Blue and the Gray Division," is composed of the 104th Observation Squadron (23 officers and 65 men), the 104th Photo Section (1 officer and 20 men), and the 104th Medical Detachment (1 officer and 5 enlisted men).

HISTORY.

During 1919 and 1920, the Flying Club of Baltimore was organized, and such interest in aviation was aroused in and around that city that the Air Corps was prevailed upon to send planes each Saturday to Baltimore for the use of Air Corps Reserve officers who were members of the Club. Much use was made of this service. It was during a celebration given in Baltimore that the present Logan Field received its name. A most unfortunate aircraft accident occurred, a Nieuport 28, flown by Lieut. Pat Logan, crashing, resulting in his death. Shortly thereafter, the field which was used for this demonstration was named Logan Field.

Upon the passage of the National Defense Act, provisions were made to form Observation Squadrons in the National Guard, and during the latter part of 1920, General Milton A. Reckord, the Adjutant General of Maryland, appreciating the interest being shown in aviation, requested that a Squadron be established in Maryland.

During March, 1921, a group of five Air Corps Reserve officers met with a representative of the State of Maryland to formulate plans for the establishment of such a Squadron. These men were Major George L. Jones, Captains John A. Hambleton, Paul V. Burwell, W.D. Tipton, Temple N. Joyce and Lieut. Charles A. Masson. At this meeting it was agreed that a Squadron could be formed, and Major George L. Jones was recommended to command the organization and supervise the formation of the Squadron. Several days later, Captains Burwell, Tipton and Lieut. Masson were commissioned and assigned to assist in the forming of the Squadron. From the first meeting in March, 1921, until June 29, 1921, the the 104th Observation Squadron was recruited up to strength and Federally recognized on that date. Shortly thereafter, the 104th Photo Section and the 104th Medical Section were formed and Federally recognized.

General Charles T. Menoher was Chief of the Air Corps at the time and General William Mitchell was his assistant, and through their offices we were able to have assigned several "Jennies" for our sole and separate use. Four war-time Bessoneau hangars were obtained, and, with the use of several old buildings on the field for headquarters, we were ready to go to war.

During the winter months, drills were held at an armory in the city and, with the first call of the robin heralding spring, we transferred our operations to the field.

On the Decoration Day following the organization of the Squadron, an aircraft show was held at Logan Field, and this was continued for ten consecutive years. In this manner the public had an opportunity to inspect the various types of aircraft and witness demonstrations in the gentle art of flying in all its phases.

During the early part of 1922, Major Jones resigned, and shortly thereafter Capt. Hambleton did likewise. Captain Burwell was promoted to a Majority and was placed in command of the organization.

Our first encampment in the field was during July, 1922, at Langley Field. Col. Danforth was then commanding officer at that field and he, being a former National Guard officer, appreciated our many difficulties. It was through his efforts that our 15-day period was made more pleasant and effective from a training standpoint, as he permitted the officers to fly any and all ships on the field as rapidly as they qualified. Rex Stoner was Engineering Officer of the A.C.T.S., and he turned over for our use SE-5's, TM's, Fokkers, DH's and, occasionally, we were permitted to get a bit of dual in a Martin Bomber. At the end of this camp, five practically new "Jennies" were turned over to us to fly home and add to our "covey" of three in the hangar at Logan Field. We looked forward with much pleasure to returning to Langley each year from 1922 to 1926, inclusive, as we were able to obtain a diversified bit of flying training, using the A.C.T.S. ships.

Due to business which required him to be absent from the State, Major Burwell resigned during 1924, and Captain Tipton was promoted to a Majority and placed in command. He took the Squadron to Langley Field for his first camp as commanding officer in 1925.

By the next camp time, in 1927, it was felt that we had progressed sufficiently to go into the field proper, i.e., out in the great open spaces, so Shepherd Field at Martinsburg, W. Va., was picked as the site. An advance detail preceded the Squadron about a week, and when we arrived a trim looking mess shack and other buildings had been thrown together in a beautiful apple orchard bordering the field. It was a lucky site, as the Mess Officer, toward the end of camp, realizing we were ahead of our allowance, would give us fried apples for breakfast, apple sauce for lunch and apple pie for supper. Field camps were held at

Martinsburg in 1927, 1928 and 1929, and during these three encampments we worked very closely with the 29th Division Staff, who were located at Cascade, Md.

During 1929, regulations were promulgated permitting a new staff officer, known as Division Aviation Officer, and Major Tipton was transferred to the 29th Division Staff as D.A.O., during June, 1930, and Capt. Charles A. Masson was promoted to a Majority and placed in command of the 29th Division Aviation in June, 1930.

During August, 1930, the Squadron returned to Langley Field for its summer encampment to obtain practice in aerial gunnery and bombing, and the 15-day period was devoted entirely to this work.

During the fall of 1931, the 29th Division troops, desiring to have their air service somewhere near their own camp at Cascade, built a permanent setup on the Department of Commerce field at Frederick, Md., and by camp time the new quarters were available and remain our camp site to date, being used during 1931, 1932, 1933 and 1934.

During 1935, the 29th Division Aviation encamped at Middletown Air Depot, along with the 28th Division Aviation of Pennsylvania, to cooperate with the 3rd Corps, acting as a reserve for the 1st Army, whose main force was in and around Watertown, N.Y. This coming year we return again to the hills of Pennsylvania to carry on with the 29th Division, which will be assembled as an entire unit at Indiantown Gap, Penna.

This air unit was exceptionally fortunate in its early days to fly with "Jennies," and quite a few cups were won in formation contests at air shows in competition with the Regular Army, Marines, Navy and other Guard units throughout the east. The organization from its inception has played hard when it was time to play, and has been just as much in earnest during working hours as any unit in the service.

The outstanding feature of the organization is the fact that from the date of its Federal recognition to the present time there has not been a fatal accident; in fact, no real serious ones; and when one takes into consideration the ships flown in the beginning without parachutes and the transition to heavier service types during the last seven years, it is believed that such a record is worthy of more than passing comment.

The Airport - Logan Field

The field is municipally controlled, and the State rents a portion for hangars, as well as the use of the field proper, from the city. There are three runways, all of which are over 2,000 feet. The entire field is available for landing. Weather Bureau and Department of Commerce service are available. The hangars are the old army type, steel frame with tar-covered corrugated iron sheet sides and roof and, while not modern or up-to-date, they adequately take care of our present needs. For administration purposes there are two portable type buildings of wood construction, which are adequate for our needs under the present set-up on a leased field.

The city has just received approval from the Federal Government (PWA) to complete its new airport, and the State will undoubtedly arrange for adequate modern hangars and administration buildings. In fact, drawings and plans are now being studied with this object in view.

Summary of Flying Activities and Training

Flying activity of the organization is an abbreviated form of the Training Directive of the Air Corps. Flying is very strictly controlled through operations with a view of diversifying the flight training to follow the Air Corps' Directive. During the winter months (November 1st to April 1st) airways, instrument and radio flights are carried on after classes in radio buzzer and other types of ground training. Commencing April 1st to camp period, a tactical problem is developed by the instructor, progressing from week to week to develop tactical work commensurate with the requirements to be encountered while in camp with the Division as a whole or the Division Staff, as the case may be. Unusual methods developed by this organization and strictly adhered to are as follows:

(1) One ordered drill period each week, on Saturday from 2:30 p.m. until dark, and all officers and men of the Squadron, Photo Section and Medical Section carry on their respective duties.

(2) a. Officers of the grade of Captain for the past five years are assigned to staff work, as department heads, i.e., Headquarters, Medical, Operations, Plans and Training, Engineering and Supply. Junior officers are assigned to these sections as assistants, and each year a re-assignment is made.

b. The balance of the junior officers are assigned to other sections, i.e., Photo, Radio, Transportation, Armament, Mess. There are also assistants assigned in each of these sections to avoid any difficulty should an officer resign or be absent because of ill health or business connections. Over a period of years every officer learns the duties and requirements of the various sections in a squadron, and it better qualifies him later to command the Squadron in peace time or in time of emergency adequately to fill any vacancy.

c. Visual charts of attendance by sections are maintained by section leaders. Visual charts of flight time, as well as types of missions, are also maintained.

d. Section leaders prepare winter training programs for their own sections

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38TH DIVISION AVIATION, INDIANA NATIONAL GUARD
(113th Observation Squadron)
Stout Field, Indianapolis, Ind.

THE 113th Observation Squadron, 38th Division Aviation, was organized in February, 1921, and reorganized as the 137th Squadron (Observation) on August 1, 1921, at Kokomo, Indiana. The personnel was obtained by original commissions and enlistments. Redesignated as the 113th Squadron (Observation) on January 10, 1923, disbanded June 9, 1926, and reorganized at Indianapolis, June 10, 1926.

Commanders: Major Wilbur Fagley, February 1921, to June 30, 1922.
Major James C. Patten, July 1, 1922, to June 9, 1926.
Major Richard F. Taylor, June 10, 1926, to September 10, 1932.
Present commander, Major Oliver H. Stout, since September 11, 1932.

During the World War there was a Squadron bearing the number "113", namely the 113th Aero Service Squadron, organized at Ellington Field, Texas, per par. 3, SO. #65, Hqrs. Ellington Field, March 13, 1918. Redesignated Squadron 'C', Ellington Field, July 24, 1918. As of December 1, 1918, Squadron 'C' was consolidated with other Ellington Field Squadrons (A, I, K, N, X and Z), to form the "Flying School Detachment, Ellington Field", per par. 7, S.O.294, Hqrs. Ellington Field. This Flying School Detachment was demobilized at Ellington Field, September 1, 1919. The Historical Section of the Army War College is now engaged in a study involving final cases of reconstitution of World War units and their consolidation with existing units. It has been recommended that the World War 113th Aero (Service) Squadron be reconstituted and consolidated with the present 113th Observation Squadron. However, the recommendation can not be acted upon until the entire study is completed.

Stout Field, the home of the 38th Division Aviation, consists of 220 acres situated about 4½ miles southwest of the center of the city. Facilities include a brick Headquarters building with hangar space 100 feet by 120 feet with shop and operations office, officers' locker room, armament section, stock room and Quartermaster supply room on the ground floor; squadron offices, enlisted men's locker room, parachute room and four class rooms on the second floor. There are three metal hangars with concrete floors situated north of the administration building, also a one-story building housing the 113th Photo Section, 113th Medical Department Detachment, a restaurant and two rooms devoted to the use of visiting pilots. The restaurant is open between the hours of 7:30 A.M. and 5:00 P.M. and all day Sunday. South of the Administration building is a small brick building housing the Communications Section of the squadron and the oil house. All buildings except the three metal hangars, are heated by steam from a central plant in the basement of the Administration building. The field is equipped with boundary lights, lead-in and obstruction lights. Boundary lights do not burn all night, but a watchman turns same on when needed. There is installed a 25,000 gallon storage tank using the Aqua System for delivery. There is an underground pipe line to switch site east of field. There are no runways, but the field is well drained and is usable at all seasons of the year.

The ground for Stout Field was purchased by the State of Indiana in 1927. In that year two metal hangars were moved from Kokomo, Indiana, and re-erected on the new Field. Improvements came slowly at first. Several years were required to level off the surface of the field. In 1929, the State bought and erected a third steel hangar. In that year also the Curtiss Flying Service leased a portion of the field and erected the present brick hangar and Administration building and the building now occupied by the restaurant, Photo Section and Medical Detachment. In 1931, the State bought and converted to the use of the 38th Division Aviation all of the facilities of the Curtiss Flying Service which had abandoned its Indianapolis base.

In 1934, projects for the improvement of Stout Field were initiated under F.E.R.A. and subsequently continued under W.P.A. A drainage ditch was dug along the north and west boundaries of the field. A second story on the east side of the Administration building was constructed to provide additional class rooms and additional space for an enlisted men's locker room. Also a new heating system, utilizing a hand-fired, coke burning boiler and unit heaters, was installed. The facilities of the photographic and communications sections were enlarged and modernized.

Projects now under way will provide additional hard surfacing around the main hangar building, a six car garage, an oil house, an ordnance storage magazine on the west side of the field, the tiling and filling of the drainage ditches on three sides of the field, an outdoor pistol range, and an indoor rifle range.

(Continued on page 9).

26TH DIVISION AVIATION, MASSACHUSETTS NATIONAL GUARD
(101st Observation Squadron)
Boston Airport, Boston, Mass.

EARLY in 1921, the Air Service of the Massachusetts National Guard was organized by a group of war-time pilots and observers who were then members of the "Archie Club," the membership of which was composed of AirService officers who flew over the front lines. Known as the 1st Aero Unit, the Squadron was Federally recognized November 18, 1921.

At the time of Federal recognition, the organization was distinctly "on the ground." The quarters provided for assembly were in a State armory in the heart of the City of Boston, and there were no organized flying facilities. The Boston Airport did not come into existence until 1922, and the little flying done by the pilots of the Squadron was performed at the old Army Reserve station at Framingham, Mass.

After the establishment of the Boston Airport, the Squadron was issued two standard Air Service hangars which, after much delay, were erected by the State. For the first year of active flying, the organization was loaned a few Jennies. It was not until the second year that the Squadron had its own airplanes. The facilities of the airport were primitive in the extreme. It was months before any water was available, either for servicing Hisso's or washing faces, and the effect of an afternoon's flying off the cinder runways made the lack felt the more. It was years before light, power and telephones were installed. For eight years the sanitary facilities consisted of the well known outdoor contrivance. A gradual increase in quarters at the airport took shape in the form of two old war-time shacks, moved from the old cantonment at Camp Devens, 30 miles away, and one portable building of the type ordinarily purchased by the foot. The only heat available to stave off the rigors of New England winters was given by numerous coal stoves of various sizes and vintages. During the winter months, the heating of oil and water was accomplished concurrently with the thawing out of personnel. During this time the organization was still quartered in the city Armory, and as it increased its personnel, the quarters there proved almost as inadequate as those at the Airport.

There came a day when the enlargement of the Boston Airport left the Squadron's hangars located in the exact center of the flying area, and it was many months after all other buildings had been moved before the hangars were moved to a new location at the edge of the field. This move did the buildings no good. They soon became so decrepit that the Militia Bureau sent several reports concerning the "lack of suitable housing facilities." The officers of the Squadron had made repeated efforts to obtain State funds in order to improve the quarters and to centralize activity by providing space enough at the Airport so that the armory quarters could be abandoned. All such efforts had met with failure which, as subsequent events proved, was the greatest fortune the Squadron could have had. The situation had become so acute in 1932 that it was apparent new quarters were imperative. Consequently, an appropriation of $250,000 was asked of the State, and it was received. With this sum, and with building materials and labor at their lowest levels, the organization built the present sumptuous quarters.

These facilities comprise hangar and shops, office and assembly spaces, all under one roof. The building has approximately 45,750 square feet of floor space. The hangar is 110 feet clear width and 165 feet long, with 22 feet clear under the roof trusses. The hangar door is 100 feet wide and is of the electrically operated lift type. All the different sections and activities of the organization are provided with ample working space and equipment. The laboratory of the 101st Photo Section is the finest to be had. It consists of a large developing room, separate printing, finishing, and enlarging rooms, a chemical mixing laboratory, a loading room, a large store room, a mosaic assembly room, and a headquarters. The communications section has a large laboratory and a radio station, with suitable storerooms and offices. The armament section is provided with a gun strong room, a workshop, ammunition storeroom, offices and a pistol range. There is a parachute packing room, with splendid light and ventilation. The hangar is flanked with shops, Air Corps storerooms and service facilities. The garage will house nine vehicles. There is even a special workroom for the use of the tow target details The office section provided a large headquarters, the various examination rooms of the medical section, the office of the Division Air Officer, a recruiting section, and operations and engineering offices. There is an elaborate reception room for visitors, and the officers lounge is a thing of beauty.

The Officers' Club presents many unique features, and its operation has been enjoyed by many who are now members of the Pious Club. Men's and officers' locker rooms are large, light and airy, and are equipped with large lockers. The toilet facilities are modern in the extreme. No expense was spared to provide equipment and furnishings suitable to its its intended purpose. The design of the building corresponds with other Airport structures.

The 26th Division Aviation has participated in some interesting flight missions. Part of the advanced training of flights consisted of establishing an operating base away from the Squadron airdrome during summer camp, (humorously known as security by dispersion). The incidents surrounding the experience of "A" Flight's mission of this nature made history, particularly when the Flight was required to engage in ensuing missions improperly attired, or with no attire at all, due to the interest that "B" Flight had taken in the maneuver. A further advance in training required an extended night cross-country flight, performed by combat teams only. This consisted of an all night flight from Boston to Cleveland in the dead of winter, with the temperature on the ground 5 above zero. Starting at 11:00 p.m., the flight arrived in Cleveland at 9:00 a.m., having been forced down at Syracuse in a blizzard, and pushing ships around at Buffalo for service at 3:00 a.m. in a gale, below zero. The wreck of an American airliner in the Adirondack Mountains brought out the Squadron to search the country side in bitter cold weather. Day and night for three days, with observers putting in 18 hours in that time under the most trying conditions, the Squadron personnel searched until the wreck was located and the persons aboard rescued.

The Squadron boasts of no Caterpillars. There has been only one fatality in the entire history of the unit, and that was eleven years ago. The only injury due to flight duty since then was a bump suffered by an observer when his airplane became tangled up in some high tension wires during the course of a flight while making a survey of ice conditions in New England.

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WORKS PROGRESS ADMINISTRATION AID TO NATIONAL GUARD AVIATION

The report of the Works Progress Administration, released to the press on May 3rd, discloses that the Airports and Airways Division of that governmental activity, under the able administration of the Division Air Officer of the 31st Division, Alabama National Guard, has been instrumental in affording valuable aid to National Guard aviation units throughout the United States. This assistance serves the double purpose of providing relief employment and making a lasting contribution to the National Defense. At the same time, it is a direct aid to the hard pressed States struggling with their own individual problems of relief. The Works Progress Administration is to be congratulated upon this especially worthy objective of their activities.

Space prevents the inclusion of details of the work being done for the National Guard Aviation Units for the various States. The following is a summary:

The 45th Division Aviation, Colorado National Guard, Lowry Field, Denver, Colorado, has received Works Progress Administration funds for construction of a very commodious steel and concrete building, 148 by 184 feet overall, containing 16,800 square feet of hangar floor space. The 154th Observation Squadron, National Guard (Corps Obs.), Little Rock, Arkansas, has received WPA funds for improvement of their hangars; the 31st Division Aviation, Birmingham, Alabama, has received WPA funds for new quarters; the 30th Division Aviation, Nashville, Tennessee, has received WPA funds for new quarters; the 41st Division Aviation, Spokane, Washington, has received an allotment of WPA funds; and the 27th Division Aviation, Staten Island, New York, has received WPA funds for quarters and landing field improvements. Plans and application are being prepared for submission to the Works Progress Administration for replacement of quarters and hangars for the 43rd Division Aviation, Brainard Field, Hartford, Connecticut. The buildings of this unit were so badly damaged by the flood in the Connecticut River valley in March, 1936, that replacement will be more economical than repair. The water came over a 35-foot dike protecting Brainard Field, finally breaking the dike and causing an exceedingly destructive rush of flood waters over this field. This caused a serious loss to the 43rd Division Aviation, as their quarters and hangars were of a modern and commodious type. The 28th Division Aviation also has a plan and application prepared for submission to the Works Progress Administration, covering quarters at the Philadelphia Municipal Airport, Philadelphia, Pa. Applications have been approved by the Works Progress Administration, but work has not actually started, on projects for the 33rd Division Aviation, Chicago, Illinois, and for improvement of the landing field of the 38th Division Aviation, Indianapolis, Indiana.

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MAJOR McCORMICK JOINS CATERPILLAR CLUB

While returning on April 30th in a P-26C airplane, from Barksdale Field, La., on completion of aerial gunnery practice, Major Harlan T. McCormick, Air Corps, stationed at Selfridge Field, Mt. Clemens, Mich., was forced to "bail out" over Elizabethtown, Ky., when the propeller broke in flight. Major McCormick suffered no injury.

30TH DIVISION AVIATION, TENNESSEE NATIONAL GUARD
(105th Observation Squadron)
Sky Harbor, Murfreesboro, Tennessee

WHAT is now the 105th Observation Squadron of the National Guard of the United States was formed in the early fall of 1920. For over a year the men met and conducted their drills and gave and received what instructions they could without any equipment. The Squadron could pass all of the requirements for Federal recognition, except for a landing field and hangars. In 1921, Mr. H.O. Blackwood, of Nashville, made a donation of $1,000 in cash, which enabled the Squadron to obtain its first hangar and thereby qualify for Federal recognition. The field was rented by the State and named Blackwood Field, in honor of Mr. Blackwood. Federal recognition was granted in December, 1921, and our Squadron became the fourth National Guard Squadron in the United States. We were the first to organize, but lack of hangar and field forced us to take fourth place in the ranks of the Federally recognized Squadrons.

The first hangar obtained was from Park Field, in Memphis, and Mr. Blackwood's donation went in great part to paying for its transportation and erection on Blackwood Field. This was the first of many journeys that this hangar was destined to make. The hangar was erected on a field close to The Hermitage, the former home of Andrew Jackson. The first location of the Squadron is commemorated in our insignia, which is carried on all of our planes. This insignia is a picture of Mills' equestrian statue of Andrew Jackson, which is located on the Capitol grounds of Nashville. The only change that has been made is that the feet of the horse now rest on the clouds. We firmly believe that General Jackson would be found in the Air Corps if he were alive today.

The Squadron then moved to McConnell Field, a small municipal field at Nashville. This field was named in honor of Lieut. Brower McConnell of the 105th Observation Squadron, who was killed in a crash at Langley Field, Va., while on duty with the Regular Army. Our hangar moved with us, and the Squadron operated from McConnell Field for several years.

The Squadron was then transferred to Memphis, Tenn., in the fall of 1930. Regardless of their years of service and their qualifications for continued service in the Air Corps, the entire personnel of the Squadron were discharged and left as they had been in 1920, with no planes, no equipment and no organization. It was at this time that the spirit that has marked the 105th since its early days was most clearly in evidence. The Squadron continued to meet and to drill each week. The personnel retained their old rank in their own eyes and in the eyes of their fellow soldiers. No pay was received for these drills, and we really had nothing to help us through those dark months but a memory and a hope. Within six months our hopes were realized. The Squadron was returned to Nashville, and we stepped in and carried on as we had done before.

Our stay at McConnell Field after the return from Memphis was very short. We were notified that we would have to move and would have to provide an airport that would pass inspection by government officials. Through the courtesy of the American Airlines, we were permitted to move to Sky Harbor at Murfreesboro, and to use the hangar built and owned by American Airlines and to operate from their field. Had it not been for this kindness, the Squadron would have been without even a temporary home. We were allowed to use all of the buildings owned by the American Airlines except their operations office, and we were given offices beside the hangar that were sufficient for our purposes.

Other buildings were needed to house all of our equipment, and the officers of the 105th donated the necessary funds to build a parachute house, garage, a photographic hut and to equip them with the necessary furnishings. It was not the first time that the officers had been called upon to donate part of their salary checks, since the return from Memphis cost them nearly $2,000. Notes were signed and the necessary funds raised, and we began the long process of repaying our obligations.

We received some much needed help from the CWA Program. One of the jobs assigned was the movement of our well-traveled hangar from McConnell Field to Sky Harbor. They started the erection of the hangar there, but it has never been completed. We have a roof over our heads, but there are no walls around us. Increased activity and air traffic on the part of the American Airlines made it necessary for us again to hunt for a home. Our planes were being crowded from the American Airlines hangar and we could see that they wanted and needed the entire plant at Sky Harbor. The American Airlines Company has been more than kind to us, and their officials have told us that we were welcome on their field just as long as we cared to stay, and that they would share what space they had with us.

For years we had been hoping for a real municipal airport that was close to Nashville, and finally in 1935, with the aid of Federal funds and a purchase of land made by the City of Nashville, actual work on this airport got under way. The new airport is located six miles south of Nashville on the Murfreesboro Pike. This location will reduce the number of miles traveled for drill by the 105th from 52 to 12. The field will have a runway North-West by South-East, 500 feet wide and 4,800 feet long. Another runway, North-East by South-East will be 500 by 5,000 feet, and there will be a third runway East and West 500 feet by 3,500 feet. The Squadron will have two hangars, one brand new 120 by 130 feet with lean-tos on the sides. The buildings are to be of stone and, therefore, permanent. We are moving our beloved and much traveled hangar, and we hope that this time it will reach its final resting place. We will also have an Administration building, two stories high, and Assembly Hall, which will be 112 by 48 feet. This all seems much too good to be true, for we have been pushed from pillar to post for 15 years and this is the first time that we can count on a permanent location with buildings that are for our use alone. It is a delightful change from our original location on Blackwood Field, with one sheet iron hangar and 4 airplanes. We believe that our new location will compare favorably with that of any National Guard Squadron in the United States.

The Squadron first attended summer encampment at Montgomery, Ala. Later, for one year we went to Memphis and operated from Woodstock Field there. For the past 8 years we have been attending camp at Camp Jackson, Columbia, S.C. During the winter of 1935, we got word that this summer's encampment would be at Valparaiso, Fla. Our hopes were high, but we have recently received notice that we would again be at Columbia, S.C.

After considerable knocking on wood and extensive propitiation of all the Gods of Chance, we decided to mention the flying record of the 105th. Since its organization and recognition in 1921, the pilots of the Squadron have flown many types of airplanes from many different fields and in all kinds of weather and on all types of missions required by Army Regulations. During those 15 years there has been only one fatal crash in connection with Squadron activities. We believe that this is a safety record that cannot be beaten by any other National Guard Squadron in the United States.

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38th Division Aviation, Indiana N.G.

(Continued from Page 5.).

Upon completion of present projects, a supplemental project will be asked for to brick veneer the three metal hangars at the north end of the field.

For a number of years the 38th Division Aviation has ranked high among the 19 squadrons of the National Guard in total flying time. Emphasis has been placed on radio and photographic work, instrument flying and aerial gunnery, using camera guns. The 38th Division Aviation has been called out on State duty several times during emergencies, such as strikes and floods. Considerable photographic mapping has been done for State governmental agencies, such as Purdue University. This work will eventually provide an aerial survey of all of the 93 counties comprising the State of Indiana. The Squadron has also enjoyed the privilege of training with the Regular Army units at Fort Knox, Ky., such as the 68th Field Artillery and the 1st Cavalry (mechanized). These missions for the Regular Army consisted in artillery adjustment and march and battle reconnaissance.

Since the installation of boundary and obstruction lights at Stout Field, a great deal of attention has been paid to perfection of pilots in night missions.

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33d Div. Aviation, Ill. National Guard

(Continued from page 27).

the Regular Army, Department of Commerce, as well as various National Guard officials.

The present hangar accommodations are somewhat cramped, and additional space has been rented for some of the departments in stores across the way from the airport. The proposed new hangar is expected to make the rented quarters unnecessary if and when it is completed.

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AFTERMATH OF ERUPTION OF MAUNA LOA

The historic attack by the 5th Composite Group, Luke Field, Hawaii, on the "Red" Forces of "Madame Pele" in her subterranean stronghold of Mauna Loa, whereby she was compelled to abandon her advance on the city of Hilo and retire underground, continues to attract world wide attention. Prof. Jaggar, U.S. Volcanologist on the Island of Hawaii, who conceived and planne the attack carried out by the Air Corps, after lecturing locally on the bombing of the lava flow, is reported to be leaving, at the invitation of the British Government, to study volcanic activities on the Island of Montserrat in the West Indies. The fame of the 5th Composite Group goes with him.

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Progress on the new runway at Luke Field, T.H., in process of being installed at a cost of some $100,000, more or less, goes forward rapidly. It is hoped that it may be completed by May 27th for the Department Commander's annual inspection which is scheduled for that date.

31ST DIVISION AVIATION, ALABAMA NATIONAL GUARD
(106th Observation Squadron)
Roberts Field, Birmingham, Alabama.

"THAT a man shall serve his country in time of war is noble, brave and patriotic; but that a man shall properly prepare himself in time of peace to serve in war is all these things and more. It is noble with nobility which is real, not ideal. It is brave with bravery which assumes in time of unemotional peace many burdens, among them that of bearing the lack of appreciation of those who do not consider military preparation or training necessary."

These significant words appear as a motto on the letterhead of a civilian flying club formed in Birmingham in 1921, and known at that time as "The Birmingham Escadrille." Its membership was composed chiefly of men who had had Air Corps experience during the World War, and its leader was the late Major James A. Meissner, Air Corps. In 1921, this organization, with the cooperation of Colonel Hartley A. Moon, (then the Adjutant General of Alabama) and several prominent Birmingham citizens, secured for Alabama the Observation Squadron assigned to the 4th Corps Area in the scheme of National Defense.

A Birmingham industrial plant graciously leased, gratis, a tract of its property for use as a flying field. Second hand structural steel and iron salvaged from old wartime hangars was located and granted to the organization. Approximately $5,000. was donated by Birmingham citizens to defray expenses of preparing the field and erecting hangars. Practically all of 1921 was occupied with these efforts. Finally, on November 27th, ground was broken for what is now known as Roberts Field, and clearing, grading and building began in earnest. Much of the manual labor on this project was actually performed by personnel of the Escadrille.

On January 21, 1922, the "Birmingham Escadrille" was Federally recognized as the "135th Squadron (Obsn.) IV Corps, Air Corps," with 26 officers and 120 enlisted men. Redesignated "114th Squadron (Obsn.) Division Air Corps," May 1, 1923, and then the 106th Observation Squadron, Air Corps, 31st Division Aviation, January 16, 1924. Many of these original members are still on the rolls today.

In 1923, the Squadron demonstrated how it could participate in mine rescue work, when Squadron planes landed men and apparatus at Carbon Hill, 60 miles distant, within 78 minutes after a call was received at Roberts Field. In those days this was considered quite a feat. Also, during 1923, the Photo Section began a program of photographing points of industrial and historical interest throughout Alabama. This work, which has been carried on steadily since that time, has resulted in a photographic file of inestimable value.

During the 5-year period, 1924-1929, Squadron officers made a number of trial flights in connection with the then proposed Air Mail. Squadron planes and personnel likewise assisted in the dedication of a number of airports in and near Alabama. These activities, together with routine flying missions, made up a full program for the organization, which during this period changed commanding officers from the late Major Meissner to the late W.V.M.Robertson, Jr., then to Lieut.-Colonel Sumpter Smith (now Air Officer for the 31st Division).

It was under the command of Lieut.-Colonel Smith in 1929 that the organization rendered its greatest service to the State of Alabama up to the present. On March 16, 1929, the entire Squadron was ordered on active duty for relief of families stricken by flood waters in south Alabama. Twenty-five officers and 100 men participated for 14 days and nights on this assignment, flying a total of approximately 300 hours - the equivalent of an entire summer field training period. Food and medicine dropped from Squadron planes to marooned families undoubtedly saved scores of lives in the stricken area, according to press reports from newspapermen on the scene.

Back from this flood duty, the organization took a leading part in Birmingham's campaign for a Municipal Airport. In the early part of 1930, a $1,000,000 bond issue was voted for this purpose by the citizens of Birmingham. The Squadron, however, was forced by lack of funds to remain at Roberts Field, despite the fact that inspectors regularly reported Roberts Field facilities as inadequate.

The organization, however, did not lose hope of some day being able to erect suitable hangars and buildings at the magnificent Municipal Airport. A steady campaign of publicity and pressure on legislative and other branches of local government was maintained, with the result that provision of suitable facilities at the Municipal Airport was finally approved as a government work relief project two years ago. At this writing, construction is still under way. The organization hopes to move into its new quarters by the end of 1936.

The organization at present consists of 28 officers and 84 enlisted men and is commanded by Major Henry L.Badham,Jr. Its 15-year flying records show approximately 20,000 flying hours without a fatality to its personnel.

Motto: "Summo Est Opportunitas," (there is room at the top).

MAJ. FRED SMITH
C.O. 112TH OBS. SQD.
OHIO N.G.

MAJ. H. L. BADHAM
C.O. 106TH OBS. SQD.
ALABAMA N.G.

MAJ. J. V. DALLIN
C.O. 103TH OBS. SQD.
PENNSYLVANIA N.G.

MAJ. O. H. STOUT
C.O. 113TH OBS. SQD.
INDIANA N.G.

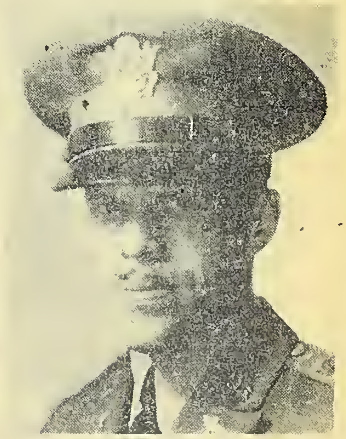
MAJ. R. A. DAY
C.O. 116TH OBS. SQD.
WASHINGTON N.G.

MAJ. R. S. MILLER
C.O. 109TH OBS. SQD.
MINNESOTA N.G.

MAJ. C. A. MASSON
C.O. 104TH OBS. SQD.
MARYLAND N.G.

MAJ. R. L. COPSEY
C.O. 119TH OBS. SQD.
NEW JERSEY N.G.

MAJ. F. R. ANDERSON
C.O. 107TH OBS. SQD.
MICHIGAN N.G.



MAJ. E. A. PETERMAN
C.O. 115TH OBS. SQD.
CALIFORNIA N.G.

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27TH DIVISION AVIATION, NEW YORK NATIONAL GUARD
(102nd Observation Squadron)
Miller Field, New Dorp, Staten Island, New York

IN the beginning of 1921, a little group of World War veteran flyers, including five "Aces," met in New York and dedicated themselves anew to the further service of their country's aviation.

On March 22, 1921, an Observation Squadron, consisting of 19 veteran flyers as flying personnel, was formally organized, pursuant to General Orders No. 4, Adjutant General's Office, New York, same date. The enlisted personnel of Company "K," 14th Infantry, NYNG, were transferred to the Observation Squadron. Other enlisted personnel were recruited, resulting in the forming of a Photo Section, Air Intelligence Section and a Medical Department Detachment.

On November 17, 1921, the War Department, Militia Bureau, granted Federal recognition and designated the above mentioned units, as follows:

27th Division Air Service, N.Y.N.G.
102nd Observation Squadron,
102nd Photo Section,
102nd Branch Intelligence Office,
Medical Department Detachment.

Major Kenneth P. Littauer was assigned as Commanding Officer of the entire Division Air Service.

The Armory of Company "K," 14th Infantry, NYNG, located at 132 Prospect Street, Hempstead, Long Island, New York, was assigned as a place of ground instruction, Unit Armory and Headquarters. The flying personnel reported at Mitchel Field, L.I., New York, for flying training and observation instructions.

For a year the officers of the Squadron continued to meet in New York for a course of study in Aviation Observation, flying training at Mitchel Field, and to supervise the training of the enlisted personnel at Hempstead Armory. In the meantime, Captain George L. Usher, A.S., U.S.A., another veteran overseas flyer, was assigned by the War Department as Regular Army Instructor.

It being evident that the organization could not function in such a split up condition, it was determined to concentrate the whole Air Service at Miller Field, New Dorp, Staten Island, N.Y., which was not being used as a flying field. Accordingly, the enlisted men and ground officers were transferred back to the 14th Infantry on September 3, 1922, and the flying personnel put on an extensive recruiting campaign on Staten Island and in New York. In the two months' time, eighty skilled men, many of them overseas veterans, were recruited, and on November 4, 1922, the Squadron began to function at Miller Field. Federal recognition was granted to the reorganized unit on the same date.

Shortly afterward, eight JN4-H type airplanes were assigned to the Squadron. These airplanes were assembled in the hangars by the enlisted men of the 27th Division Aviation.

During the winter months, the organization's enlisted personnel are trained in the assembling, maintenance and repair of aircraft, engine, radio communication, aerial photographic developing, aircraft armament and maintenance, and all other work of an Observation Squadron at the regular Thursday evening weekly drills. The commissioned officers, in addition to their duties as Instructors and Department heads of their respective departments, are also engaged in class room instructions in Aviation Observation and other related subjects.

On the first Saturday of each month, the drill is held in the afternoon, and the entire organization is engaged in flying training, tactical missions and other field duties which cannot be accomplished during the weekly evening drills.

The organization has been commanded by the following distinguished officers:

Major Kenneth P. Littauer, DSC, Croix de Guerre, Order of Leopold, commanded the organization from November 17, 1921, to October 20, 1923.

Major George A. Vaughn, DSC, DFC, distinguished World War flyer and America's second living "Ace," commanded the organization from October 22, 1923, to November 10, 1930, when he was promoted to the rank of Lieut.-Colonel and assigned to the 27th Division Staff as Division Air Officer.

Major Lawrence G. Brower, a distinguished World War flyer and veteran, assumed command of the organization with promotion to Major from Captain on November 11, 1930, vice Major Vaughn, promoted. Major Brower is the only chartered member of the organization left and has been one of the most active officers in the unit. Many of the past and contemplated improvements are to be credited to his continuous untiring efforts.

The organization has participated in field training every year at Pine Camp, Great Bend, New York. During the field training period of the New York National Guard, it furnished to the various training camps details for towing target, aerial observation and other aerial cooperative missions with other branches of the National Guard.

The 27th Division Aviation has been called by the Governor on the following dates and events:

November 6-16, inclusive, 1927. Flood relief operation in the State of Vermont.

December 11-12, inclusive, 1930. Aiding the civil authorities in jail break of the State Prison, Auburn, New York.

July 11-13, inclusive, 1935. Flood relief operation in the State of New York.

It is hoped within a few months that all of the O-38 type airplanes will be withdrawn from the organization and replaced with the recently purchased Douglas Observation airplanes of the O-46 type. It can be readily noted that the organization has grown in the same manner as any infant, from baby crawling with the old JN airplanes to the manly step of modern service type aircraft.

Miller Field, a United States Army reservation owned by the Federal Government, is situated between the upper and lower bay of New York City. The 27th Division Aviation since its existence has been a guest of the United States Army, although its maintenance problem is under the direction of the City of New York. The Federal authorities have extended every courteous assistance in making our residence at this post as comfortable as can be expected. The organization is quartered in several buildings, as follows:

The airplane hangar, located at the southeast corner of the field, is used for storage, care and maintenance of assigned aircraft. An Administration Building is being used as a Squadron Headquarters, Photographic laboratory, communication and radio station, armament room, operations office and a suitable quarters for the Medical Department detachment. A building, situated opposite the airplane hangar, is used by this unit for an armory drill hall and enlisted men's dressing room.

Although these facilities are inadequate and spread apart, thereby making the operations of the squadron rather difficult, it is hoped in the nearfuture that some means of improvement will be obtained under a contemplated Works Progress Administration Project at this post.

The Works Progress Administration improvement project will consolidate the entire unit under one roof, thereby eliminating occupancy of many buildings scattered all over the post. This improvement will be effected by the building of several Lean-To's to the present airplane hangar which will house all of the organization's departments and sections. In addition to this improvement, it is also contemplated to erect one or two buildings suitable for club and recreational purposes, both for the commissioned and enlisted personnel. The contemplated project will include the complete lighting of the flying field for night flying and operations and the elimination of a number of buildings and roads situated on the flying field, whereby, after proper filling in, grading and resurfacing, this unit will have an excellent flying field for all types of operations and suitable for all types of service aircraft.

Through the assistance of various local and Federal agents, it is hoped that these improvements will be provided in the very near future. With this contemplated plan completed, it is believed that the training and operation of this unit will be increased 100% in efficiency.

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29th Div. Aviation, Md. National Guard

(Continued from page 4.)

which are checked and coordinated by the P. & T.O., and when complete are approved or amended by the C.O., thereby assuring that the training developed by the section leader will be in accord with his ideas and, quite naturally, will be more readily pushed to a conclusion by him.

At the end of the winter period, written exams are held to determine the enlisted man's fitness to hold his rank or lose it and, thereby, give those who apply themselves a break, as they know that effort and ability count and not longevity of service.

Average enlisted attendance for the years 1932, 1933, 1934 and 1935 was 92.6%.

Retrospection

It cannot escape notice that a great diversity of opinion exists among the 19 Squadrons as to training methods, etc., and I cannot help but express with regret the thought that with these fifteen years behind us that the National Guard has not long ago obtained a comprehensive report from all Squadrons on training methods, and from such reports prepared a directive suitable for the peculiar and particular needs of National Guard Air Units as a whole with the objective of uniformity in training for all, thereby better preparing the units for service in the event they are required for an emergency. Squadrons are now equipped with service type planes, latest type radios and cameras, splendid esprit de corps. But, without a definite training directive the training, as developed by the Squadron Commander, may not be sufficiently broad to obtain the essentials necessary for tactical work with associated units in the field. A definite training directive would undoubtedly bring better results.

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A delegation of three Swedish Air officers, consisting of Majors Henry Kjellson, Gustaf Q. Strom and Nils Soderburg, recently visited Barksdale Field, La. They were tendered official and unofficial luncheons and appeared to be impressed with the establishments of the field. "It is seldom our privilege to meet foreign officers so thoroughly charming and such fine 'mixers'," says the News Letter Correspondent.

35TH DIVISION AVIATION, MISSOURI NATIONAL GUARD
(110th Observation Squadron)
Lambert-St. Louis Municipal Airport, Robertson, Mo.

THE Commanding Officer of the 35th Division Aviation, Missouri National Guard, is Major Philip R. Love, who is a graduate of the Air Corps Advanced Flying School, Class of 1924. In his class were a few other outstanding figures in aviation, such as Colonel Charles A. Lindbergh and Jimmie Collins.

This organization came into being on June 23, 1923. Its first commanding officer was Major William B. Robertson. Some of the original members are still with it. At present it has 18 officers and 100 enlisted men. The Squadron is quartered in a fine hangar at Lambert - St. Louis Municipal Airport.

Like most of the others, the Squadron started without airplanes. Then came a few Jennys. At the present time it is equipped with O-38E's and O-38B's.

The organization is one of the few in the country having two regularly scheduled periods of training each week. The regular armory drill is held each Friday night at the hangar, and Sunday is devoted to tactical flight training.

The training schedule has been intensive. [illegible]. Much time has been devoted to the training of pilots for observer ratings. At present, most of the pilots have dual ratings. The remainder will have them before the next encampment, the Operations Officer says, "or else!" Special radio classes are held prior to the scheduled drill period and an attempt is being made to make 20-words-a-minute operators of all the officers. Much cooperative work is done with the other arms, and special training is carried on in tactical problems.

Pilot training has included many hours of instrument work. Virtually every pilot has qualified for a "blind" flying certificate after examination by the Regular Army Instructor, Captain Arthur Thomas, Air Corps. Pilots have also been trained to take full advantage of the navigational facilities offered, such as radio, Department of Commerce beams, etc.

A tabulation of the tactical flying training performed by members of this organization during the period from July 1, 1935, to February 29, 1936, inclusive, presents an interesting picture of the work being done.

During this period of time, pilots in the Squadron have put in 850 hours at navigation problems; made a total of twenty-eight 500-mile two-stop flights and a total of fifty 200-mile airway flights.

In instrument time, pilots have flown 131 hours under the hood and 28 hours of other instrument time. Very little night flying was accomplished during the winter months, but since July 31st, 115 hours were flown in night navigation and 37 hours in other night flying. Pilots have averaged 10 hours and 20 minutes each in reconnaissance work during the period.

Through the personal efforts of Major Love, funds were raised last year for the addition of a garage to the hangar, this affording space for the storage of motor equipment and spare parts and providing also additional office space.

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32ND DIVISION AVIATION, MICHIGAN NATIONAL GUARD
(107th Observation Squadron)
Wayne County Airport, Romulus, Michigan

The 107th Observation Squadron, Michigan National Guard, was organized in the Spring of 1926, and was Federally recognized on May 7th of that year. The personnel of the Squadron on that date consisted of eight officers and fifty enlisted men.

On May 7, 1927, the first airplanes were delivered to the organization, and the development of the Squadron began in earnest. It was not long before the 107th was taking its place among the best Observation Squadrons of the National Guard.

The Squadron is now busy qualifying all pilots in instrument flying, the organization being thoroughly trained in all other phases of Observation work.

Major Frederick R. Anderson, A.C., Michigan National Guard, is the Commanding Officer of the 107th Observation Squadron.

Major Anderson commanded the 306th Squadron in the National Guard Wing of the 1st Provisional Air Division during the Army Air Corps Maneuvers of 1931.

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On Army Day, a two-flight Attack formation from Barksdale Field, La., flew over the City of Shreveport for an extended period, dropping parachute flares well away from danger areas but visible from anywhere in the city. Two civilian radio broadcasters were passengers in airplanes in the formation, and carried on a continuous broadcast over two of Shreveport's radio stations.

GREETINGS FROM THE CHIEF OF THE AIR CORPS

It is with the greatest pleasure that we dedicate this issue of the Air Corps News Letter to the interests of National Guard Aviation. We welcome the contributions you have made to YOUR issue and hope you will continue to send us items on your aviation activities.

Through my frequent contacts with the administration of the National Guard Observation squadrons, I have learned of your splendid efficiency. The continuity of personnel you have been able to maintain has been very effective in securing a well-trained personnel possessing high morale.

I voice the unanimous sentiments of the officers of the Army Air Corps in expressing appreciation for the excellent airplane servicing we have received at all flying fields of the National Guard. I desire to take this occasion to thank the squadron officers, crew chiefs, airplane and engine mechanics and operations office personnel of the Guard for their courteous consideration and care for us. We hope that we shall always be able to take equally good care of you when you visit our fields.

My best wishes are yours for many happy landings.

O. Westover,

O. WESTOVER,
Major General, U.S. Army,
Chief of the Air Corps.

45TH DIVISION AVIATION, COLORADO NATIONAL GUARD
(120th Observation Squadron)
Lowry Field, Denver, Colorado

The 120th Observation Squadron, 45th Division Aviation, Colorado National Guard, with headquarters at Lowry Field, Denver, Colo., was organized and sworn into the service in 1923 and received its first airplanes in 1924. Flight "A" was located at Denver, and later Flight "B" was sworn in at Pueblo, Colo. In 1927, Flight "B" was moved to Denver and became an integral part of the complete Squadron operating from Lowry Field.

The 120th Medical Department Detachment and the 120th Photo Section also are located at Lowry Field and, together with the 120th Observation Squadron, make up the 45th Division Aviation.

The War Department, in 1924, turned over to the National Guard of Colorado two surplus war-time hangars, and these have been used to house the airplanes and shops up to the present time. These buildings have long been considered obsolete and inadequate for the storage and maintenance of Federal property. While there are several smaller buildings on the field, consisting of the headquarters building, photographic building, mess hall and bath house for enlisted men, and an officers' club, the facilities are not large enough nor are they properly arranged for efficient training of officers and enlisted men.

Early in 1934, an effort was made to obtain a new hangar of modern construction under the Civil Works Administration. This was approved by the Washington office of C.W.A., but the Colorado State Administrator did not consider such construction fitted in to the general plan, and the building was never started. Further efforts were made to construct facilities for this organization under the Federal Emergency Relief Administration, but this also met with little success and nothing has been accomplished toward actual construction.

Profiting by the experience gained in the other two attempts, and with a State Works Progress Administration considerably more "Air-Minded" than other organizations, a third attempt was made which met with success. The new building is to be of concrete and steel construction, 148 x 184 feet overall dimensions, two 2-story wings, with hangar space in the center. The floor area of the hangar proper is approximately 16,800 square feet. The wings provide room for offices, shops, class rooms, club rooms and the necessary quarters for the various sections. The Denver city administration, under the leadership of Mayor Benjamin

(Continued on page 17).

36TH DIVISION AVIATION, TEXAS NATIONAL GUARD
(111th Observation Squadron)
Houston Airport, Texas

ORGANIZED in the Spring of 1923, the 36th Division Aviation, Texas National Guard, including the 111th Observation Squadron, the 111th Photo Section, 171st Air Intelligence Section and the Medical Department Detachment, was extended Federal recognition on June 29, 1923. The organization has continued with the same units save the 171st Air Intelligence Section, which was mustered out of the service on June 20, 1925.

At the time of organization the unit headquarters were located in downtown Houston with flying activities conducted at Ellington Field.

Major Bernard A. Law, a war-time flier, was appointed commanding officer, and continued in that capacity until December 1926, when he resigned to engage in commercial aviation.

Captain Edward V. Harbeck (then 1st Lieut.),A.C., was detailed to duty with the organization in September,1923, as Instructor and remained in that capacity until June 1926, being relieved by Major (then 1st Lieut.) Walter H. Reid, A.C.

Upon the resignation of Major Law, Lieut. Reid was commissioned a Major in the Texas National Guard and assigned to duty as organization commander in addition to his duties as Instructor.

After several months of untiring effort, Major Reid, representing the State of Texas, entered into an agreement with the Houston Airport Corporation whereby that Corporation would erect on the Houston Airport and lease to the State of Texas for use of the 36th Division Aviation two hangars, each 60' x 120', one administration building and five sets of quarters for caretakers. In December, 1927, the buildings were declared ready for occupancy and the transfer of all property from Ellington Field to the Houston Airport was made.

In the Spring of 1931, Major Reid secured three additional buildings, a completely equipped photo laboratory, radio building and garage.

Major Reid was relieved from duty as Instructor in August, 1931, after having served a little over five years with the organization. He was succeeded as Instructor and Commanding Officer by Captain Thomas W. Blackburn, A.C., who was, in turn, succeeded by Captain Harry Weddington, A.C., in July 1935.

The present authorized strength of the three units of the 36th Division Aviation is as follows:

Observation Squadron 31 officers, 70 enlisted men; Photo Section 1 officer, 20 enlisted men; Med. Dept. Det. 1 officer, 5 enlisted men.

The Squadron started out with the old JN-4's as training planes, drawing its pilot personnel from the ranks of wartime fliers. Later the squadron obtained TW-3's, PT-3's, O2-H's, O-38's and it is now equipped with eight O-43A's, all training ships being discontinued and service types substituted.

The Houston Airport, home airdrome of the unit, is located 10 miles southeast of the downtown district of Houston, the Squadron occupying the southeast corner.

During the summer training period, the organization moves to Camp Hulen, Palacios, Texas, 120 miles southwest of Houston. The camp is on a 13,000-acre military reservation on Tres Palacios Bay in Matagorda County. At the northeast corner of the Camp is a large landing field and camp facilities. The landing field is safe for all types of aircraft (heavier-than-air) during normal weather. Since hard-surfaced runways have not yet been made, it is not advisable to try and use the field in exceedingly wet weather. Personnel from Brooks Field, San Antonio, Texas, use the Camp Hulen landing field and camp facilities during their gunnery practice. The 67th Service Squadron, from Randolph Field, has established a recreation camp there.

During the field training period, the squadron cooperates with the ground troops in artillery problems and as infantry contact planes. A high degree of efficiency has been developed in the squadron's spotting of artillery fire, the artillerymen hailing the aid of the Air Corps as of great value in both time and accuracy.

Here, too, during the annual training period, the squadron practiced bombing assiduously until provided with the O-43A. And during the annual encampment the pilots and observers are put through a course of aerial machine gunnery,both on ground and tow targets. The 1936 annual field training will not include aerial gunnery. The squadron has established a target range near the Houston airdrome where the pilots and observers will get their gunnery practice weekly while at home, leaving the entire time while at summer camp to employment in cooperation with the ground troops of the division.

While on the home airdrome the squadron has been of inestimable benefit to flood sufferers and hunters lost or marooned out in the vast marshes of the Texas gulf coastal plains. During floods, the squadron has aided the civil authorities in contacting communities where all wire communication was down and ascertaining

(Continued on page19).

43RD DIVISION AVIATION, CONNECTICUT NATIONAL GUARD
(118th Observation Squadron)
Brainard Field, Hartford, Conn.

SPECIAL Order #98, dated July 27, 1923, in the Adjutant General's files, commissions Talbot O. Freeman a major and appoints him the first commanding officer of the 118th Observation Squadron, which was Federally recognized on November 1,1923, with two officers and 51 enlisted men. Fourteen days later, 13 additional officers were included under Federal recognition.

After more than seven months of patient and impatient waiting, hopeful and doubtful watching of the skies, the great day arrived, Friday, June 13,1924, when four brand new "Jennies" were delivered to the Squadron from the Fairfield Air Depot. Flying became a serious business with the checking and rechecking of pilots, most of whom had not flown since their discharge from the Army in 1919.

Governor Trumbull took a keen interest in all Connecticut National Guard organizations, but especially did he foresee what an important part the Air Service would play in any emergency. Thru his personal and official influence, a beautiful brick administration building was constructed; also, a brick Photo building, brick machine shop, brick radio building, brick garage, two corrugated iron hangars containing living quarters for the permanent detail, and a brick heating plant with oil burners, at an initial cost of $114,500. Each building was equipped with the finest respective appointments. We were the envy of every National Guard Squadron, as well as Mitchel Field.

The year 1925 was marked by several incidents of peculiar interest. Three air meets were conducted in the State, in each of which the Squadron took a very active part. The Squadron received the first ship other than a Jenny, namely, a TW-3. The Squadron made its first formation cross-country flight. This was to Lakehurst, N.J. During the year, the Militia Bureau loaned, for shorter or longer periods, a DH with Liberty motor, an SE-5 and a Sperry Messenger. On the last day of the year, the Squadron had its first real blow; we lost, thru resignation, our first commander, Major Freeman, who, by his persistency, tactfulness, persuasiveness and executive ability, had built far greater than even he had dreamed.

The year 1926 opened with the appointment of Captain William F. Ladd as commander, with the rank of Major. He is now Adjutant General of the State. This tells the story of the kind of man who succeeded Major Freeman. This year saw our last drill in the State Armory, where we had been meeting since our organization, and our first drill in our new quarters at Brainard Field, where later there was an official "hangar-warming." It was during this year that the officers instituted the practice of meeting each drill night in the "dining room" in Hangar #2 for dinner, a practice which has never been interrupted. Personalities of note visited us from time to time, including General O'Ryan, Governor Trumbull, Senator Bingham, General Cole and Colonel Foulois, now retired Major-General, and Lieut. Leslie Arnold of "Around-the-World" fame.

Connecticut set the pace for all other States in 1927, by appointing the first State Aviation Commissioner. He was none other than one of the Squadron's officers, namely, Captain Clarence M. Knox, who immediately drew up complete aviation rules which were enacted into law by the Legislature. These laws have served as a model for Legislatures of other States. Colonel Lindbergh visited Hartford on July 20, 1927. After a parade, during which he was received with wild enthusiasm by the populace, the Squadron united with the Aero Club, City, and State Commissions in tendering the Colonel a dinner at the Hartford Club.

In May, a powerful beacon and border lights were established at the field, the formal dedication thereof being featured by a most elaborate program. Before the year closed, the last of the "Jennies" had gone forever. New ships, both training and service, had been received, and with a beautiful field and new buildings, everything was set for steady and thorough development. But, alas, in November, the Connecticut River rose to a height never before known, overflowed its banks, swamped the field and inundated every one of the buildings with great loss of equipment.

In January, 1928, the city started preparations to build a 35-foot dike around the field to prevent forever another flood catastrophe. After dark, on May 11,1928, the Squadron gave an interesting demonstration of an air raid on Hartford, which was defended by the Rhode Island Anti-Aircraft unit. Governor Trumbull and his official associates, the Mayor and city officials, and thousands of other citizens witnessed the event. During July, the Squadron had its two weeks' intensive training at its own field at Groton. This field was most appropriately named Trumbull Field, in honor of the man who had persuaded the State to purchase several hundred acres of the Plant estate upon which were many most substantial concrete buildings, very suitable for all the varied work of the Squadron.

From 1928, the history of the Squadron is a constant and steady development upon a well-laid foundation of its first five years. Under the watchful eyes and efficient minds of Lieut. "Bob" Webster, Regular Army, who had been detailed as Instructor in 1928, and Major Ladd, nothing was left undone which would contribute to the standard set by the Militia Bureau. And when, on January 1, 1930, Major Ladd resigned to be appointed Adjutant General of the State, Major Hubert E. Johnson succeeded him and has most capably carried on the work.

Night flying has been done by individuals since the early days of the Squadron. Actual training along this line, including night formation flying, was not begun until 1930. During the Air Corps Maneuvers of 1931, when over 650 ships visited Hartford and vicinity, five ships of the Squadron participated in the activities. In 1934, the State Legislature appropriated money to engage the Fairchild Aerial Photo Company to make a complete picture of the State. In this work, one of our planes with our own personnel played an important part. The Photo Section laid the entire mosaic.

During a serious strike in a near-by city in 1934, the Squadron performed a most unusual service. By radio, observers kept the militia and police informed as to the activities of the strikers, thus minimizing surprise disturbances.

In 1935, the Squadron participated in the Pine Camp Maneuvers in New York State, and were assigned a location about eight miles from Watertown. Within two days, the Squadron was functioning completely in every detail as an observation unit. Just prior to going to Pine Camp, the Radio Section received a new SCR-185. Though there was no time for instruction, in less than 48 hours after reaching Watertown, it was being used for all messages, and functioned perfectly with First Corps Headquarters. After the Maneuvers, the Division C.O. complimented the Squadron on its communications work.

On Wednesday, March 18, 1936, the Connecticut River had arisen beyond any previous known heights. Thursday morning it was near the top of the 35-foot dike which, after the 1927 flood, had been built at a cost of over one million dollars and which was considered at least six feet higher than the water would ever rise. Before noon, the planes were ferried to Rentschler Field and all transportation, except a five-ton caterpillar tractor, and all valuable equipment, including cameras, radio sets, machine guns, etc., were moved to the State Armory. Sometime Thursday night, the water came over the top of the dike; then part of the dike broke, and in a raging torrent the water rushed over the field which was soon under 15 feet of water. Trees, logs, iron barrels, houses and barns were hurled against the Squadron buildings. And now, April 6, 1936, when the water is gone, the worst is realized. The five-ton tractor, which was in the garage, was carried 150 feet out on the flying field; every building is so seriously damaged and undermined that economically it would seem less expensive to tear down what remains of the buildings and rebuild completely rather than try to repair the damage. So, after thirteen years of hard and difficult work, the Squadron, at least as far as material is concerned, must begin again at scratch.

- Capt. Daniel R. Kennedy, Chaplain.

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45th Div. Aviation, Colo. National Guard

(Continued from page 14).

F. Stapleton, has turned over the northwest corner of the Municipal Airport, consisting of 19.61 acres, for the construction of buildings for the 45th Division Aviation. Grading of the site is now under way, and concrete for the footings of the buildings was scheduled to be poured the latter part of April. It will probably be late in the year before the building will be ready to be occupied.

Another project submitted by the city provides for three hard-surfaced runways on the mile square airport. By 1937, the 45th Division Aviation should be equipped with a lay-out equal to that of any of the 19 National Guard Squadrons.

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LIEUT. OLMSTED KILLED IN AIRPLANE CRASH

Second Lieut. Lawrence R. Olmsted, Jr., Air Reserve, was killed, and Capt. Walter E. Todd, Air Corps, was slightly injured when the new PB-2B airplane which Captain Todd was piloting crashed during a test flight at San Diego, Calif., April 21st. Both officers took to their parachutes when the engine of the plane failed. Captain Todd landed safely and suffered only minor injuries. Lieut. Olmsted apparently jumped from a low altitude, as his parachute opened too late.

Lieut. Olmsted was 26 years of age. He had been stationed at Selfridge Field for the past 13 months. He was a graduate of Brownsville College in Texas and from the Air Corps Training Center. His home was in Brownsville, Texas, and he was the son of Dr. and Mrs. Lawrence R. Olmsted, Sr.

The Air Corps extends deepest sympathy to his bereaved family.

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Five officers from other branches of the Regular Army, who completed two weeks' study of Air Corps tactics, departed from Scott Field, Ill., on April 30th, namely, Captain Wayne C. Smith, 2nd Lieuts. Lawrence K. White and John Neiger, of the 6th Infantry, Jefferson Barracks, Mo.; and Captains Vincent L. Conrad and George H. Passmore, of the 2nd Infantry, Fort Sheridan, Illinois.

40TH DIVISION AVIATION, CALIFORNIA NATIONAL GUARD
(115th Observation Squadron)
Griffith Park, Los Angeles, California.

THIRTY thousand flying hours without a fatality or serious injury to personnel is the record of the 115th Observation Squadron, 40th Division Aviation, California National Guard. Organized in the spring of 1924, the 115th received Federal recognition on June 16, 1924.

Instrumental in the organization of the Air Corps unit here was Major C.C. Moseley, then a First Lieutenant in the Regular Army. Major Moseley served as the Commanding Officer of the squadron until 1928. Returning to civil life he entered commercial aviation and is now managing Grand Central Air Terminal, Glendale, California.

Of the original officers who formed the squadron, but one is still connected with the California National Guard,- Lt.Col. John N. Jeffers, who served as Squadron Commanding Officer from 1928 to 1931. While he is now on the Staff of the Commanding General, 40th Division, as Division Air Officer, he still meets and flies with the organization. Three of the original enlisted personnel of the squadron are still with the outfit. They are Capts. Frank Miller, Jack Sewell, and Sgt. Adam Windberg. (The latter is now at Chanute Field taking the Mechanics Course.)

When first formed, the squadron met at Clover Field, Santa Monica, and used Reserve equipment, JN4D's (Hisso-Jennies) for flying. After leaving Clover Field, the squadron met at the National Guard Armory and at the University of Southern California for several months before coming to the present Griffith Park field in 1925. During these years the flying equipment evolved from the borrowed JN4D's, through DH's, a side-by-side TW3 (early Consolidated PT), O-2C's, PT's, O-2H's, O-2K's and Liberty-powered BT's, to the present equipment of three O-38E's and four O-38's.

During this time motor failures have caused only ten forced landings, none of which have been in the past three years. Two disabled planes were responsible for four members of the squadron joining the Caterpillar Club. In 1926 Major E.A. Peterman and Capt. Harold J. Cooper, Medical Detachment, left a Jenny when a wing came off. During 1933 Summer Training Camp, Lt. Charles Haas and Sgt. Roger Hebner "bailed out" of an O-17 under similar circumstances, all landing safely.

Similar to the advance in flying equipment was the advance in radio equipment, in which the squadron has always been able to keep ahead of the ground troops with which it works. At present, four SCR-185 sets are in use in the planes and an SCR-180 set is used by the ground station.

The Medical Detachment, organized in 1926, is now commanded by Capt. R.O. Bullis. He commanded the original detachment upon its formation, although his service has not been continuous. In 1927 he went to Europe for advanced medical study, returning to the Medical Detachment in 1930.

The 115th Photo Section, also organized in 1926, comprises 23 men, commanded by Lt. Charles P. Roberts. A five-room photo building houses its activities, and the equipment consists of one K-10 camera two K-3 B's, a Graflex, View Camera, two gun cameras, enlarging machine and the necessary developing and printing accessories.

In connection with the Photo Section, it is fitting at this time to pay tribute to its first Commanding Officer, Capt. George Sherwood. His loss to the squadron last year was deeply felt,- he was a fine officer, pilot and gentleman. Capt. Sherwood died in the crash of an airline transport of which he was pilot.

Capt. Minton W. Kaye, Air Corps, is a former C.O. of the 115th Photo Section. Capt. Kaye, who went into the Regular Army through the National Guard, was recently transferred to Bolling Field from March Field, where he was in command of the March Field Photo Section.

Another former member of the 115th Observation Squadron is Capt. Harry Claiborne, from whom the squadron receives regular and very interesting letters. He is now in Canton, China, as instructor for the Cantonese Air Force. Several officers believe that his letters, put in book form when he returns, might become a "best seller" among aviation literature.

Five Air Corps officers have been assigned as Unit Instructors to the organization since its formation. The first was Major Moseley, already mentioned. He was followed by First Lieut. Leslie Arnold. The third was First Lieut. James B. Carroll (now Major) at Chanute Field, and the fourth, Capt. (now Major) Eugene B. Bayley, A.C. Tactical School, Maxwell Field. The present instructor is Major Benjamin F. Giles, whose personality, experience and training are great assets to the organization.

The National Guard Airport is located in the Los Angeles city-owned Griffith Park, handy to Los Angeles, Glendale and Burbank. It is less than a quarter of a mile southeast of Grand Central Air Terminal, Glendale. The present two hangars are war-time sheet iron construction. The field is two-way, with two thousand feet of runway paved in the past six months and one thousand feet more of paving approved under a government work relief project. Plans for a future armory were drawn, but no definite action has been taken towards actual construction.

Capt. G.W. Coombes (Nat'l Guard Ordnance Dept.) is civilian field superintendent, serving in this capacity since 1925. In July of this year, an addition was made to the full-time employees, when Lt. L.C. Holton, Squadron Engineering Officer, took charge of airplane maintenance. Lt. Holton is now at Chanute Field taking the engineering maintenance course.

Ninety-two men comprise the enlisted strength of the squadron at the present time, including medical and photo sections. Many boosts on the way to the Air Corps Training Center at Randolph Field were received through enlistment in the squadron. A constant waiting list for enlistment aids in maintaining a high calibre personnel. A perpetual trophy cup carries the names of the best enlisted men picked at the yearly camps at San Luis Obispo. It was donated in 1926 by a local newspaper. Holding a place on the mantle is another trophy which has become well inscribed with names through the years. This is the Pilots' Dumbell Trophy, now entering upon the second column of those so honored.

Seventeen pilots and four observers comprise the commissioned strength of the 115th. In command is Major E. A. Peterman. A graduate of the Air Corps School in 1926, Major Peterman in civilian life is Aeronautical Engineer-in-Charge, West Coast Branch of the Department of Commerce.

Other Squadron officers are Captains R.O. Bullis, Medical Officer; Allen A. Barrie, Plans and Training Officer; Earl H. Robinson, Operations Officer; F.M.S. Miller, Jack W. Sewall and R.C.A. Larsen, Flight Leaders; First Lieuts. C.A. Burrows, Armament Officer; C. R. Gard, Communications Officer; H.E. Gilmore, Adjutant; L.E. Thomas, J.V. Wallen, C.W. Haas, Paul Whittier; Second Lieuts. O.D. McKenzie, Charles P. Roberts, L.C. Holton, A.S. Hurren, J.S. Southard and C.A. Shoop.

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36th Div.Aviation, Texas National Guard

(Continued from page 15)

what relief was necessary.

Probably one of the outstanding services of the Squadron was its aid in analysis of the cosmic ray. The Houston Squadron planes piloted aloft for the first time scientists who sought to measure the cosmic ray at varying altitudes and free from the mass attraction of the earth. These flights were conducted in 1932, coincident with the unfortunate Alaskan cosmic ray expedition, which cost thousands of dollars, consumed months and resulted in loss of human life through falls into mountain crevices. The measurements of the cosmic ray were made by Dr. L.M. Mott-Smith, Instructor of Physics at Rice University, Houston, Dr. L.G. Howell, of the Bureau of Geographical Research of the Humble Oil & Refining Co., Houston, assisting. The first flight, taking measurements at varying altitudes from 5,000 feet on up to 20,000 feet, was made on June 17, 1932, 1st Lieut. Alex G. Greig piloting Dr. Mott-Smith.

On June 20th, 1st Lieut. Earle T. Showalter piloted Dr. Howell; on June 21st, Capt. J.F. Aldrich piloted Dr. Mott-Smith; on June 23rd, 2d Lieut. John H. Eagle piloted Dr. Howell; on June 29th, 2nd Lieut. Ben F. Thompson piloted Dr. Howell; and on June 30th, Capt. Aldrich again piloted Dr. Mott-Smith. Following these flights, Dr. Mott-Smith journeyed to Dayton where, at the Air Corps engineering field, he conducted further flights and measurements.

Thus, from this simple beginning in aerial flights to measuring the cosmic ray, that means of making these experiments have completely superseded the arduous mountain climbing expeditions and its dangers and, according to scientists, with much better results.

The Squadron personnel has been and continues to be thoroughly instructed in flight problems - interception, radius-of-action, blind or instrument flying, beam, formation, radio - Morse and mike, the camera gun, aerial gunnery by machine gun, and photographic missions, including pin point, obliques, verticals, mosaics, etc. The mosaics for the Camp Hulen problems, covering 13,000 acres, were made by the Squadron's photo section.

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PLENTY OF RADIO AT SCOTT FIELD

Scott Field, Belleville, Ill., has six radio stations, of which four are official and two are of the amateur type. The stations are:

WYF	200	kc.	Post Radio Station (Hours 6:00 a.m. - 6:00 p.m.)
ZT7	263	kc.	21st Airship Group, 24-hour "Air Alert Watch."
KQ8	396	kc.	9th Airship Squadron. Routine tests. Active in the field.
MK1	515	kc.	15th Obs. Squadron. Used for training officers. It is active in the field.
W9CJH	3951 14240	kc. kc.	Private Frank W. Brashears, Station Complement. Amateur.
W9WGK	1867.5	kc.	Pvt. 1st Cl. O.O. McIntire, 9th Airship Squadron. Amateur.

28TH DIVISION AVIATION, PENNSYLVANIA NATIONAL GUARD
(103rd Observation Squadron)
Philadelphia Airport, Philadelphia, Pa.

FROM organization in December, 1923, to the present is a long story. In the making of that story, the efforts of many men have been recorded. After Federal Recognition, June 27, 1924, the organization worked to obtain proper airport facilities. The "Jennies" arrived in May, 1926. Their stay was brief, for in a little over a year they were heaped upon a pyre. From their ashes arose a single PT; then came the O-17's in 1928.

With the impetus given to aviation in general, came the new O-11's, which thereafter were usually seen at airport dedications and air meets throughout this part of the country. The Air Corps Maneuvers in 1931 saw the National Guard Air Corps units participating with the Regulars.

The Douglas O-38's with which we are now equipped, have put on a good show but are fast reaching the age of retirement. January, 1935, witnessed the National Guard Aviation participating in the Air Corps maneuvers in Florida. Nearly all the units were represented, and such opportunities are welcomed for the additional training they make possible.

Throughout the summer months, the 103d Observation Squadron is on call for cooperative missions with the other branches of the 28th Division. The 103d and 104th Cavalry work calls for the airplanes to fulfill their mission. Night tracking for the 213th Anti-aircraft Regiment turns sweltering nights below into chilly breezes upstairs.

The summer encampments are usually held at Middletown Air Depot, from which the squadron operates in its work with the 28th Division. As a rule, the first week of the encampment is spent in squadron training and the second week in day and night missions with the other units of the division.

During the year, training progresses regularly, with each scheduled drill realizing the completion of another portion of the program. The manner in which the enlisted men take to this training is to be commended. Their regret is that there is not enough time available for the work each section has to do. The radio section seems to be the greatest offender in not hearing recall. Armament is busy with the camera guns. The Photo Section is working on the pictures the camera guns have taken. Recruits come and go, and more physical examinations are required; also, semi-annually, the 64's for each officer. In winter, the flights spend most of their time in the classroom, but now that summer is coming they will be out on the line and in the shop, practicing what they have learned, finding out how the gadgets work, and increasing their practical application.

The Works Progress Administration moved in on our airport several months ago, with the result that flying activities have been moved to Pitcairn Field, 17 miles north of town. The Philadelphia Airport looks a bit wierd, to say the least, with seven railroad tracks across its face and great rows of dirt piled high along both sides of each track. A bulldozer is knocking down these piles and, by the end of summer, the facial should be completed. Heretofore, following every rain, small lakes were as natural to the airport as the hangars themselves. The fact that the level was six feet below city datum no doubt accounts for the lakes. The WPA expects to eliminate these lakes.

During the Fiscal Year 1935, the six O-38's assigned to this organization flew 1726 hours. For the eleven pilots and nine observers, that amount of flying time means much valuable training. Of the total, 720 hours were devoted to various types of cooperative missions with other branches of the service, from Infantry Cooperation and Liaison to towing targets for the Anti-Aircraft; from Mapping areas to ferrying personnel of other branches.

The balance of 1006 hours are non-cooperative missions devoted to navigation, formation, local flights and night flying. For a group of part time soldiers, dependent upon commerce and industry for a living, this record seems worthy of mention.

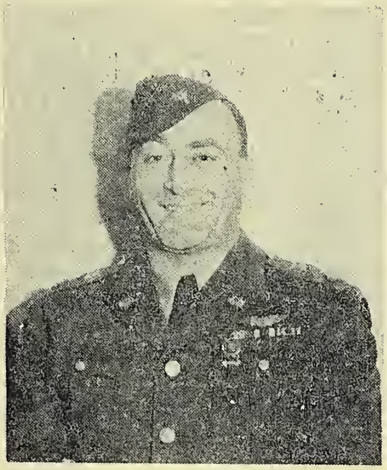
The 103d Observation Squadron has been commanded by Major John V. Dallin for the past five years. Major Dallin was in the British Royal Air Force during the World War, and is well known throughout this country in connection with aerial photographic work. Captain DeCoursey received his JAP rating January, 1926, and passed the tests for AP in May, 1932. Captain Logan received his JAP in March, 1924, and AP in July, 1933. Captain Scattergood is a graduate of the Air Corps Training Center, October 1930, having served his active duty at Dodd Field before joining the 28th Division Aviation. Lt. Carlisle is also a graduate of the Air Corps Training Center, June 1930, having served his active duty at Selfridge Field. Lt. Humphreys graduated from the Air Corps Training Center in June, 1930, and served active duty at Selfridge Field. Lt. Pennock received his AP in May, 1931. Lt. Vickers was rated JAP in March, 1930 and AP in August,

MAJ. C. E. HODGE
C.O. 101ST OBS. SQD.
MASSACHUSETTS N.G.

MAJ. H. E. JOHNSON
C.O. 118TH OBS. SQD.
CONNECTICUT N.G.

MAJ. C. A. MC ELVAIN
C.O. 108TH OBS. SQD.
ILLINOIS N.G.

CAPT. HARRY WEDDINGTON
C.O. 111TH OBS. SQD.
TEXAS N.G.

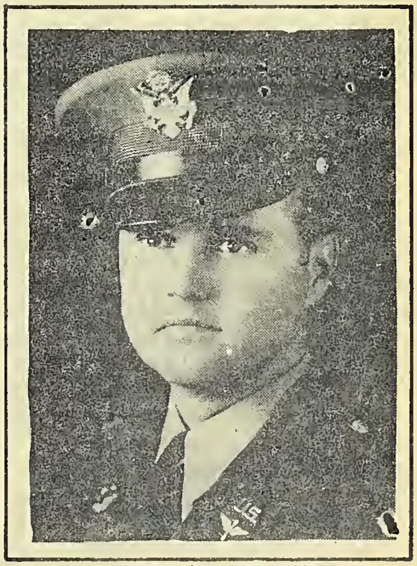


MAJ. L. G. BROWER
C.O. 102ND OBS. SQD.
NEW YORK N.G.

MAJ. ADRIAN WILLIAMSON
C.O. 154TH OBS. SQD.
ARKANSAS N.G.

MAJ. PHIL. LOVE
C.O. 110TH OBS. SQD.
MISSOURI N.G.

MAJ. V. D. STONE
C.O. 120TH OBS. SQD.
COLORADO N.G.



MAJ. W. M. WILLIAMS
C.O. 105TH OBS. SQD.
TENNESSEE N.G.

1931. Lt. Barringer, noted glider pilot and author of aviation articles, received his AP in May, 1934. Lt. Benn graduated from the Air Corps Training Center in February, 1932, and served two years at France Field, Panama Canal Zone, before joining the 28th Division Aviation. Lt. Fanning graduated from the Air Corps Training Center in February,1932, and served active duty at Mitchel Field. Lts. Brenner, Craven, Hawkins, Jablonski, Merrill, Miller, Quinn and D'Ettore make up the observers, having come up as enlisted men or passed the pilot rating.

Early Wednesday morning, March 18, 1936, Major Dallin received a phone call from the Commanding General in Harrisburg, that many portions of Pennsylvania were in danger from flood water. He proceeded immediately to Harrisburg to await further instructions. About noon, March 19, Major Dallin called from Harrisburg to mobilize seven officers and thirteen enlisted men, and the necessary preparations were made for movement to Lancaster Airport during that day. The mobilized detail arrived at the Lancaster Airport in the morning of the 20th. Four airplanes, equipped with bomb racks for dropping relief bags, patrolled the areas designated by higher authority. Photographs taken of the stricken areas aided materially in directing relief units from the ground. Radio communication was maintained from the airplanes, transmitting on 3105 kilocycles, to the Airways Radio Station WWHP at Harrisburg, Pa. The main body of the detachment broke camp Sunday afternoon, March 22d, and departed for home, arriving there the same day. A small unit remained on duty until April 2d, when it was also demobilized.

This incident is the most recent in the service of this unit and depicts, in general, its status of training and preparedness. The following is a list of units with which this organization has had cooperative missions during the Field Training Period and at other times during the year:

The 55th Infantry Brigade; the 56th Infantry Brigade; the 53d Field Artillery Brigade (75 mm. & 155 mm.); the 176th Field Artillery Brigade (155 mm. Howitzer); the 103d Regiment Engineers (Combat); the 52d Cavalry Brigade; the 213th Coast Artillery (AA).

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The 9th Airship Squadron, Scott Field, Ill., has renovated and rearranged the equipment in its mess hall and kitchen in order that the handling of food at mess time will be more expeditious. The cafeteria style, which has been used for a number of years, has been found to be the best possible method of serving food.

A NOTEWORTHY PHOTOGRAPHIC MISSION

The News Letter Correspondent from Mitchel Field, L.I., New York, believes that a record was established by Master Sergeant Joe.M. Cates, 8th Photo Section, Mitchel Field, when he secured 530 vertical aerial photographs in one hour, 28 minutes, during a cooperative photographic mission for the Beach Erosion Board, along the New Jersey coastline. These photographs were made under difficult circumstances, inasmuch as the requirements specified that there be no tilt and that each photograph overlap 60 percent. The elapsed time was one hour and 28 minutes, and does not include time required for magazine changes nor while circling for position. The interval between exposures was slightly less than seven seconds, and it required five of these for the electric motor to rewind the film and shutter, leaving less than two for Sergeant Cates to level his camera.

The pilot, Captain P.T. Cullen, of the 97th Observation Squadron, was having his troubles because, in order to have even this interval, it was necessary to fly the Fairchild at the rate of 60 miles per hour, which is not a comfortable flying speed. Also, there was the problem of keeping over the low water mark. The altitude of 3000 feet permitted little deviation.

These photographs are made monthly (weather permitting) at low tide for the Beach Erosion Board, and is part of a four-year study, recently initiated, of the erosion of the New Jersey coast, particularly in the vicinity of Atlantic City.

Similar studies are being made on Long Island and at Hampton Beach, N.H.

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A NEW GAS STOVE FOR FIELD USE

The 15th Observation Squadron, with the cooperation and engineering experience of Lieut.-Colonel Frank M.Kennedy, Commanding Officer of Scott Field, Ill., has designed and manufactured a propane (bottled) gas stove for field use. The stove is made of angle iron with all joints welded, and is covered with asbestos-lined sheet metal. It has three boiling containers in the bottom half and a baking oven and a warming oven in the top half. It was designed to be mounted in a 2½-ton cargo truck. The stove has a feeding capacity for 225 men and operates at a cost of less than one-third cent for each individual mess prepared.

This stove was used in the 15th Obs. Squadron kitchen for one week and was found to be satisfactory. At present it is being tested by the 61st Coast Artillery Corps, Fort Sheridan, Ill., on extensive field maneuvers.

41ST DIVISION AVIATION, WASHINGTON NATIONAL GUARD
(116th Observation Squadron)
Felts Field, Spokane, Washington.

"WASHINGTON has been offered one of the 19 National Guard Observation Squadrons authorized by the Militia Bureau. I've offered it to Seattle and Tacoma, but Spokane has an equal opportunity of getting it. Whichever city raises $10,000 first for the erection of hangars is going to get the Squadron."

Adjutant General Maurice Thompson of Camp Murray, American Lake, Washington, concluded these remarks in Spokane in the spring of 1924, and boarded a train immediately for Washington, D.C. The train had hardly reached the city limits before a group of Spokane business men telegraphed the Adjutant General that "the $10,000 has been raised and we want the Squadron."

That's how Spokane became the most northerly military air base in the United States. "Lazy husbands," who preferred the county jail to the duty of caring for their families, were hauled daily to the old municipal golf course that was to be rapidly converted into a station for the 41st Division Aviation, Washington National Guard. The golf course was not a pleasant site to gaze upon, because between the golfers' hazards and large boulders it seemed like an endless task to build a landing field there, where years before cattle had grazed and one of the early Indian wars had taken place.

But even in those dark days of aviation, Spokane had one man who knew something about landing fields, and that man was soon to become the Major in command of the 116th Observation Squadron.

"The old golf course has one thing strongly in its favor, and that is perfect drainage," said Major John T. Fancher, who a few months before had returned as a 1st Lieutenant, Air Service, from the World War. Major Fancher, a native of Spokane, was overseas.

There were exciting days between March and July 24, 1924, when orders came to form the 116th Observation Squadron. Major Fancher had not been loafing on the job. He had searched out the few Air Corps officers and enlisted men who had been in the World War, and around these he started to build his organization. Each day brought new thrills. Next in importance was the arrival of two metal hangars. Then came the expenditure of the $10,000 for erection of the hangars. Concrete floors were poured for the hangars, which were bolted together and made ready for the arrival of the flying armada.

Beside the two army hangars stood a deserted barn, the remaining relic of days when cowboys stabled their ponies after herding cattle in the neighboring valleys and rolling hills. The barn was to have a new use. It was to become headquarters for the transportation section, which up to that time had no rolling equipment. The 116th Medical Detachment also needed headquarters. This problem was solved by the construction of a lean-to on the north side of the barn. There the late Captain E.E. Langley, Flight Surgeon, opened up for business.

It was definite that Spokane was to have the 116th Observation Squadron and the 116th Medical Detachment. This meant the assignment of a Regular Army Air Corps officer as instructor.

In July, 1924, Captain Arthur E. Easterbrook, an "Ace" in the World War, was detailed as Instructor. With him came Staff Sergeant John Simpson, also an overseas veteran, as Sergeant-Instructor. Captain Easterbrook is now a Major, on duty in the Office of the Chief of the Air Corps, Washington, and Sergeant Simpson is still a guiding force in the 41st Division Aviation.

On August 6, 1924, Federal recognition was extended to the organization, with Major Fancher in command. Spokane threw its enthusiastic support behind the new military organization, which grew in popularity and attracted scores of recruits and war-time officers, few of whom survived the Flight Surgeon or could produce the necessary credentials.

First drills of the troops were held in the armory of the 161st Infantry regiment, Washington National Guard, but this proved unsatisfactory to an Air Corps organization. Drills were then held at the field, which is a 15-minute drive from the city.

It was April, 1925, that brought the thrill of thrills to the 116th Observation Squadron. The flying armada, three newly overhauled "Jennies," rumbled into Spokane in one box car. The "Jennies" arrived completely disassembled, some bogey to a crew that knew little, if anything more than the fact that the motor and tail skid went on opposite ends of the airplane. Long days followed in which parts were tried here and there to determine where they fit best. Finally, the "Jennies" were moved to the line for test flights by Captain Easterbrook. They really flew, and Spokane was certain it had an Air Force! Other "Jennies" followed, and soon the 116th Observation Squadron welded inself into a smooth-running organization.

It was a sorry day when orders came, grounding all airplanes unless the personnel wore parachutes. Parachutes had never been issued, and couldn't have been used even if they had been issued. Next came orders requiring that the upper wings of the "Jennies" be redesigned so as to permit the pilots to "bail out," and then came the parachutes.

The 116th Observation Squadron had its first two annual encampments in 1925 and 1926 at its home station. Two such camps clearly indicated to the high command that neither their Air Corps nor ground troops would benefit from divided training. The rest of the Washington National Guard held its camp at Camp Murray, American Lake, near Fort Lewis, Washington.

In the spring of 1927, Lieut. Caleb Vance Haynes arrived to succeed Captain Easterbrook as Instructor. Orders were received calling the Squadron to Fort Lewis for the 1927 camp. Fort Lewis has no landing field, but landings had been made on the parade ground by Regular Army Air Corps pilots. Hearing that the 116th Observation Squadron was to camp at Fort Lewis, orders came from the Commanding General that his parade ground would not be used for an airport.

But the 116th Observation Squadron was a "pioneer" in the building of landing fields by this time. The personnel had watched its own landing field constructed. Furthermore, the personnel had flown "Jennies" and knew just how long a landing strip had to be to satisfy a "Jennie." Therefore, it was quick work to remove a few towering sentinels of the forest in order to clear the approaches to the narrow strip of "reasonably" level ground.

In 1927, the 116th Observation Squadron took a place of national prominence in the aeronautical world, because Maj. Fancher, Lieut. Haynes and Spokane business men planned the successful 1927 National Air Races and Derbies. The National Air Derby Association was organized to sponsor this $125,000 event. Major Fancher was managing director. He made several trips to New York, and succeeded in securing the participation of the Army, Navy and Marine Corps air forces. Air derby racing was originated by the National Air Derby Association with derbies from New York and San Francisco to Spokane. A non-stop flight from New York to Spokane, for $25,000, came near being a success, but failed when Eddie Stinson got lost within 50 miles of Spokane.

Major H.B. Clagett, now Brigadier-General and commander of the First Wing, GHQ Air Force, commanded Army airplanes participating in the National Air Races. This event was of tremendous benefit to the officers and personnel of the 41st Division Aviation.

In March, 1928, two 3-ship formations flew from Spokane to Wenatchee, Wash., to participate in the annual Apple Blossom Festival. It was then that a serious blow was handed the 41st Division Aviation, which still was a young, but thriving, National Guard Observation Squadron. Major Fancher led his command in formation maneuvers, which greatly pleased the merry-makers in Wenatchee. Night came, and Wenatchee asked that aerial bombs be dropped. Major Fancher accepted the detail and completed it satisfactorily. On landing, he discovered three bombs remaining in his airplane. Rather than leave the bombs for some small boys possibly to be injured with, he stood on the ground and tossed the time-fuse bombs to explode in the landing field. The third and last bomb exploded while still in the hand of Major Fancher, causing his death.

Lieut. Haynes succeeded Major Fancher as Commanding Officer and, completing a successful tour of duty, was succeeded by Captain Robert G. Breene. It was during that officer's tour as Instructor and Commanding Officer of the Squadron that the 41st Division Aviation secured its new $125,000 PWA hangar. Regular Army Air Corps specialists have declared the hangar to be outstanding in every respect.

It looked like the job was about done when Captain Robin A. Day became the commanding-instructor. But there were problems in the air to be solved. Pilots of the organization had never been permitted, without cross-country authority from the Adjutant General, to land away from Felts Field. Somehow, that was changed. Cross country flights as distant as Boeing Field, Seattle, are made on authority from Captain Day. Extended cross country flights to all parts of the United States are as common as peanuts at a circus. The gasoline problem is no more.

And Captain Day is making it his business to "keep the boys under the hood." He believes in instrument flying. Last year his command ranked first among the National Guard Observation squadrons in the number of hours flown. This year it is seeking to better its record of more than 3,000 hours accumulated last year.

Captain Robert Owen and Lieut. Hillford R. Wallace are the only two remaining original officers of the 41st Division Aviation, the former being the ranking captain and the latter the commanding officer of the 116th Photo Section. Lieut. Wallace attended the Photographic School, and was on active duty for two years at Crissy Field, Calif.

Seven of the original enlisted men are still in the Squadron, viz: Master Sgts. John Dean, Paul Sager, Aloysius Hylent, Staff Sergeants Durwood J. Anderson, O.B. Fay, Paul Perry and Stanford B. Whitely.

Felts Field gained its name from a native son, Lieut. Buell Felts, who was killed in a crash near the airport.

The organization is proud of many accomplishments, chief among which was the 1935 year of daily service to the United States Weather Bureau in taking the upper air readings at 18,000 feet altitude, assistance in securing the Northern Trans-

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154TH OBSERVATION SQUADRON, ARKANSAS NATIONAL GUARD
Little Rock Airport, Little Rock, Arkansas

FEDERALLY recognized on Oct. 24, 1925, we are not the oldest or the youngest National Guard aviation outfit, but we have plenty to be proud of. In April, 1926, we received our first airplanes. One year later, the Mississippi, Arkansas, White and St. Francis Rivers went on a rampage and flooded nearly all of the eastern half of Arkansas. As a result, the Squadron was ordered to active duty for 27 days, bringing manna from the heavens to the stricken and isolated populace in the form of beans and sow belly. There was water everywhere, but the boys flew those old Jennies through it all without batting an eyelash. There were times when the parachute packs came back with a few button holes cut in them! It was a fortunate thing for the Squadron to be able to demonstrate our value to the State and the country in this disaster. The Squadron also benefitted by the experience, because we literally flew the wings off those Jennies and, as a result, we received replacements in the form of three PT-1's and one DH-4.

During the Air Corps Maneuvers in May, 1931, we started out as the next to the last flight and ended by being designated as the Headquarters Flight for the National Guard Wing, led by Major Ralph Royce. And when that little get-together was over, could those boys fly formation! They could even make biscuits with those O-2's. They were good to start with, but when it was over they were perfect.

In March, 1935, the Squadron was authorized to increase its officer personnel by eight observer "Shavetails." A cadet class of twelve men was organized to train in competition for the eight vacancies. These men were selected from a large number of candidates. In the selection of each candidate, particular attention was directed toward his adaptability, his enthusiasm for the Squadron, his potential ability as an officer, and his standing in the community. A rigid course of training was set up for them to follow. They were required to complete all of the 10 series and most of the 20 series correspondence courses; 25 hours in the air performing tactical missions; a course of training in theory of radio and machine gunnery; and last, but not least, they were required to be able to take code at a lively clip. During the summer encampment they were dubbed the "Peepers," and they immediately accepted the name with a great deal of pride, adopting as their cry "Peep, Peep." (Said cry being given in the manner of a baby chick lost from its mother). None were given their commission until after the summer encampment, and by October, 1935, all eight vacancies were filled with rated JAO's. We are proud of our new officers and expect great things of them.

An ambitious controlled flying schedule to be completed by July 1, 1936, has been set up, and there is considerable rivalry between "A" and "B" Flights as to which will do the best job during this period. Pilot-observer teams have been formed, and every week-end our ships are in the air every available minute performing tactical missions. Within the next few weeks, we shall limber up the old machine guns on the range at Camp McRae in hopes of qualifying all our officers as aerial gunners. Particular attention is also being given to blind flying training and all pilots are striving to get a certificate of proficiency in blind flying from our instructor, Lieut. Claire Stroh. We expect to end this fiscal year with a job well done and many hours of constructive flight behind us.

Our hangar and administration quarters have been a sore spot with us for a long while but now, at last, our fond dreams are being realized. Our new $75,000 hangar and administration building will be completed about July 1, 1936, and will be one of the largest and best of any National Guard Squadron in the country. Are we happy! Each section will have ample quarters, including the Officers' Club, which will be complete even down to the last detail.

This year's summer encampment will be held the latter half of August at Camp Hulen, Texas, in conjunction with the 206th Coast Artillery. After sipping the elixir of the Kansas sun flowers around Fort Riley for a number of years, we ought to be in good shape to rope or, possibly, throw some Texas bulls.

We are proud of our near perfect attendance record of both the officer and enlisted personnel. This record is due to the fine esprit de corps existing in the organization.

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41st Division Aviation, Washington National Guard

(Continued from page 23)

continental Airway, inauguration of the Public Works Administration airport program in Washington, and assistance to all other arms of the service.

Officers of the organization include Major Robin A. Day, commander; Captains Robert Owen, L.C. Sherman, Claude Owen and William G. Foster; 1st Lieuts. Laurie Heral, Byron Cooper, Dale Swartz, Ellsworth C. French, Clare Hartnett, Stanley Wagner and H.R. Wallace (commander, photo section); 2nd Lieuts. E. Malnstrom, Harold Hansen, Jack Rose, Emmett Corrigan, Dean Eshelman and Carl Shirmer. Captain John Walter, pilot-flight surgeon, died late in March. No successor has been appointed.

37TH DIVISION AVIATION, OHIO NATIONAL GUARD
(112th Observation Squadron)
Cleveland Airport, Cleveland, Ohio.

AT the time it was decided that aviation should play a part in the National Guard, a squadron of Observation Aviation was assigned to the 37th Division, to be located at either Columbus, Cleveland or Cincinnati. Naturally, each of these three cities wanted to have the squadron located near or within its boundaries. It was finally decided that Cleveland should be the location.

The Cleveland Chamber of Commerce was active and helpful in locating the squadron at Cleveland, which at that time was in the process of developing the present excellent airport. Sufficient ground on the airport was deeded to the State of Ohio for the use of the squadron. After several weeks of intensive work in recruiting the enlisted personnel, the squadron was mustered in on June 20, 1927, by Major Emil Marx, who is now the Adjutant General of the State of Ohio.

Work was started upon the hangar as soon as the ground was available, and in due time the building was completed. On the first anniversary, June 20,1928, the hangar was dedicated with appropriate ceremonies, numerous dignitaries attending.

The original officers were as follows: Major Thomas J. Herbert, Captains Errol Zistel, Fred L. Smith, Paul F. Collins, 1st Lieuts. Willard E. Leisy, Byron E. Cook, Ernest W. Lofquist, Clyde Young, 2nd Lieuts. Nevin C. Barnes, Wm. K. Ebel, John K. Gill, Clifford McMillin, Richard V. Nelson, Mack E. North and Harvey J. Stoneburner; 1st Lieut. Herbert B. Wright, Flight Surgeon, and 1st Lieut. Clyde H. Butler, Photographic Officer.

Changes have taken place in this organization as in affairs generally. Major Thomas J. Herbert was commissioned a Lieut.-Colonel and named Air Officer for the 37th Division. He was later retired due to injuries suffered in the World War. Captain Zistel was placed in command of the Squadron upon the promotion of Col. Herbert, and continued in that capacity until he was named Air Officer of the 37th Division and advanced to the rank of Lieut.-Colonel, which he now holds. Captain Smith was advanced to the rank of Major upon the promotion of Col. Zistel, and is at present in command of the Squadron. Captain Collins moved to the east and was associated with Amelia Earhart in an air line. Lieut. Cook resigned to accept a Captaincy in the Air Reserve. Lieut. Ebel moved to Baltimore, became associated with the Glenn L. Martin Co., and at present is a Captain in the Maryland Squadron. Lieut. Stoneburner left for California to join the engineering staff of the Douglas Aircraft Co. Lieut. Young was advanced to Captain, served as such for a number of years, resigned last summer due to ill health, and died shortly after the first of the year.

The present officers of the Squadron are Major Fred L. Smith, Captains Samuel J. Price, Clarence D. Barnhill, John K. Gill, Willard E. Leisy, Ernest W.Lofquist, 1st Lieuts. Martin F. McQuilkin, Richard V. Nelson, Erle S. Ross, Mack E. North, Raymond C. Russ, James C. Barr, Karl E. Bushong, Wm. M. Robertson, 2nd Lieuts. Rudolph W. Dean, Raymond C. Kissack, Kenneth A. Cool, Donald W. Patrick; Capt. Herbert B. Wright, Flight Surgeon and 2d Lieut. Henry A. Crawford, Photographic Officer. Recent resignations in the Squadron were by 1st Lieuts. Clyde H. Butler and Nevin C. Barnes, both being due to the press of business.

On September 15, 1927, the Squadron received 4 PT-1's, and proceeded to use them to the fullest extent under the capable guidance of 1st Lieut. (now Captain) "Shorty" Cummings, who was assigned to the Squadron as its first Instructor. One of the old air mail hangars at the Cleveland Airport was used by the Squadron until its own hangar was available.

The schedule of drills was first worked out as follows: Friday night for class work and study, and Sunday morning for actual flight operations, which system is still in use by the organization.

In time the organization received three O-11's, and worked out with them, taking them to its first field training period during July, 1928. Later, O-2H's replaced the O-11's, and still later O-38's and O-38B's replaced the O-2H's. The organization at present is equipped with O-38's and O-38B's.

The Squadron has been using Camp Perry for its field training up to the present time. Lieut.-Colonel Harry Kerr, the commander of Camp Perry, has from the beginning been very helpful to our organization. In tiling the rifle range to make it suitable as an airdrome, and later in supervising the construction of a new field adjacent to Erie Proving Grounds on the west, Col. Kerr during the past year commenced construction of permanent buildings for the use of the Squadron at the new field, and the work is proceeding at a satisfactory rate.

It is understood that the organization will participate this year in the maneuvers of the Second Army, to be held during the first two weeks of August at Fort Knox, Ky. The officers and men of the Squadron are looking forward to an entirely different type of training period from that experienced in the past.

The Squadron participated in the Air Corps Maneuvers of 1931, and was placed among the three leading units for its performance and efficiency. During 1932, the organization had the first taste of strike duty in the coal mine area of Ohio, and carried out its assignments with promptness and dispatch. During the Electric Auto Lite strike at Toledo, the Squadron furnished ships to transport gas bombs from Pittsburgh to Toledo. It has also dropped food to vessels stuck in Lake Erie ice, worked on search parties, scattered ashes, acted as escort to visitors and otherwise justified its existence.

At the expiration of Capt. Cummings' tour of duty with the Squadron, 1st Lt. Charles Backes (later Captain) was assigned as our Instructor. Both of these gentlemen have done a very good job while they have been with our organization, and just as we were very sorry to see "Shorty" leave, so shall we also be very sorry to bid good-bye to Captain Backes.

The 112th Observation Squadron has participated in the National Air Races from 1929 to the present time, and if any of the readers of this column have neglected to take advantage of the hospitality of our organization, it is the writer's observation that the fault lies with the reader.

The Airport at Cleveland at the present time consists of 640 acres, which is rapidly being increased in size to 1040 acres, due to the good offices of the WPA. It is planned to install an asphalt landing mat, 2,000 feet square, on the east center of the field and to extend the west part of the field to provide for a blind landing area and the National Air Races. The longest approach on that side will be 8,800 feet, the present temporary grandstand to be moved to the bank of Rocky River and made a permanent installation.

The enlisted personnel of the Squadron is to be congratulated upon the loyalty and ambition shown since the formation of the organization. Some of the original members are still connected with the Squadron and are our most valued veterans. A chain is as strong as its weakest link, so we consider ourselves fortunate to have such reliable personnel.

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NEW ATTACK PLANE ARRIVES AT BARKSDALE FIELD

After considerable delay and speculation, the first of the new A-17's finally arrived at Barksdale Field, La., having been flown from the Northrup factory by Lieut. Gavin, Engineering Officer of the 13th Squadron. A large unofficial welcoming committee expressed immediate approval of the plane's design and appearance.

Subsequent flights by pilots of the Third Attack Group brought further approval of the plane's flying qualities. It handles nicely in the air, maneuvers smoothly and with a minimum of "squashing." Slow landing speed and rapid take-off are further points of superiority. Cruising speed,as to be expected, is much faster than that of the previous model attack plane, and this is true also of its top speed. The greatest advance is in the cruising radius.

As in most of the newer planes, there are more cockpit gadgets too, such as propeller gear shift and cowl flaps, to occupy the pilot's mind, but he trades mental activity for increased physical comfort. Thirteenth Squadron pilots who flew the new plane rubbed their weather-beaten faces and wished in retrospect that they might have flown in the comfortable enclosed cockpits during the recently completed New England Maneuvers.

Less maintenance has been necessary than on the previous model, and the crew chief's opinion of the new plane is also favorable. Cleanness of design results in a minimum of external attention and adjustments. Experimentation and study by Lieut.-Colonel Naiden and the Group Engineering Staff have resulted in recommendations for minor changes which will improve serviceability and assist in maintenance.

Staff Sergeant Krovontka, the first A-17 crew chief, reports a "smooth runnin engine, with all parts, except a few plugs, easily accessible for inspection and adjustment. Engine performance has been quite satisfactory. It starts easil and the only difficulty experienced so far has been in connection with it stoppin However, with the assistance of Mr. Klingan, Pratt & Whitney representative, the safest and most effective methods for starting and stopping have been worked out.

Group authorities were gratified to relieve the strain on their aesthetic judgment when they finally adopted the simple and appropriate design for painting submitted by Cadet Macklin.

The new streamlined wing lights and "spread" beam have proven quite satisfactory for night landings.

The principal problem concerning the new planes is not one of quality, but of quantity. Since the Attack Group is already trading in its well used old models, delivery of the new ones can hardly be too rapid.

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Special effort has been made in the 20th Bombardment Squadron, Langley Field, Va., during the last month to qualify all officers, flying cadets and enlisted men as Expert Aerial Gunners before the bombing season, starting about May 15th. So far, over 95% of those firing qualifiedas exper

33RD DIVISION AVIATION, ILLINOIS NATIONAL GUARD

(108th Observation Squadron)

Municipal Airport, Chicago, Illinois.

CELEBRATING its ninth anniversary on July 1st of this year, the 108th Observation Squadron of the 33rd Division, Illinois National Guard, was formed on July 1, 1927, under the direction of Major-General Roy D. Keehn and Major Merrill D. Mann, Jr. Planes and pilots of the Squadron have piled up nearly 14,000 hours in the air, and many of the original officers and several of the men, who were in the Squadron when it was formed, are still active members of this unit. During all the activities of the 108th Observation Squadron, there have been no fatal accidents.

In August, 1927, a month after the Squadron was formed, the Division Aviation went to Camp Grant at Rockford, Illinois, for the first time. It was not until the day or so after the actual 15-day training period began that the Squadron was equipped with planes. These were four PT-1 Consolidated, and were flown up to Camp Grant by Regular Army officers from Texas.

Since it was the first time that other units of the Division had had the opportunity of working with an Air Service unit, the planes were popular. One of the first activities of the unit was to carry as many of the officers of the unit as was possible on short flights over the camp area. A section of the parade ground was used.

In the nine camp periods during which the Squadron has functioned with other units of the 33rd Division, great progress has been made. An airport has been leveled out in one section of the camp ground area, and in the August, 1935, camp, ten airplanes of the latest type were available for training purposes.

Following the training period, the organization received one O-31 Gull wing Douglas. When Major Merrill D. Mann, Jr., reverted to his Regular Army rank of Captain and transferred to the Tactical School at Maxwell Field, Ala., last year, Captain C.A. McElvain, who up to that time had been the Squadron's Operations Officer, was named commanding officer. Captain Velie L. McElvain succeeded him as Operations Officer.

Operating from the Chicago Municipal Airport, one of the busiest in the United States, the Squadron has carried out a definite program, increased from year to year as the type of equipment and number of planes increased. Formation flying, mosaic photography, oblique photography, radio communications, dropping and picking up messages, instrument flying, individual night and day navigation flights, and the performance of various other missions have been carried out.

During 1935, using the range at Camp Logan, Ill., and operating out of the Kenosha Airport, 18 officers of the Squadron qualified for various aerial marksmanship ratings. Those qualifying for expert ratings were: Capts. Wilson Newhall, Herbert F. Fenwick (Flight Surgeon) Lts. Russell Daniels and Roscoe Burley. Those qualifying for sharp shooter ratings were Major C.A. McElvain, Capt. Clyde Wilcox, Lieuts. Monroe MacCloskey, John A. Casey, J.K. Fogel, Lester Marriner and Walter Baryl. Those qualifying for marksmen ratings were Capt. V.L. McElvain, Lieuts. J.C. Keogh and William Westlake.

In addition to the pilot's course, the Observer's course was also flown. Capts. R.C. Kuhn and S.J.V. Bovey qualified as experts. Lieuts. Frank Allen and Verner Wide qualified as marksmen.

Major Mann, while acting as commanding officer, was the Regular Army instructor of the unit. When he left the organization, Captain Charles Douglas, U.S. Army Air Corps, became the Regular Army instructor. Under the tutelage of Captain Douglas, weekly lectures are being held in the officers' lecture room on various phases of Air Corps and other units' activities.

This year 18 cadets were chosen, with a view to providing additional officer observer material. The course, in which Capt. Douglas and Lieut. J.C. Keogh were the instructors, started on January 1st.

Already covered in this course has been military map reading, organization of the Army, employment of the Air Corps, work of the Ordnance Department, use of weapons. The course has also included practical bench work on machine guns. Of the original 18 trainees, 12 remain. Some of the latter are attending radio school three nights a week and several of them can now receive and take about 25 words a minute.

In the belief that the hangar, provided by the State of Illinois nearly nine years ago, will be obsolete in housing new and larger equipment, Major McElvain and members of his staff worked out a plan for a new large hangar which, it is hoped, may be constructed with Works Progress Administration funds. Plans for this new hangar were developed after careful study of all the National Guard hangars in the United States. The proposed building is to be 220 feet by 60 feet, with a 98-foot opening. It has been estimated that such a building will cost in the neighborhood of $295,000.

This modern hangar is to include class rooms, adequate space for communications, photographic, shop, supply and engineering departments, and will be used to house approximately $500,000 worth of government equipment. Cooperating in developing plans for this new building are members of

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44TH DIVISION AVIATION, NEW JERSEY NATIONAL GUARD
(119th Observation Squadron)
Newark Airport, Newark, New Jersey

THE last and, therefore, the "Recruit Squadron" of National Guard Aviation, officially designated as the 44th Division Aviation, was organized and Federally recognized on January 30, 1930. In September, 1928, 1st Lieut. Kellogg Sloan and Sgt. Robert E. Maloney was designated by the War Department as the Instructor-Inspector and Sergeant-Instructor, respectively, to assist in the organization of this new unit. Their task was one requiring a start at scratch - the [illegible] of personnel, equipment and necessary State housing. Through their efforts, in cooperation with the various State departments, a two-story Administration Building and a large hangar were built at Newark Airport. Lieut. Sloan is deserving of much credit for the planning and designing of the buildings which have served so well in the adequate housing of this organization to date.

Major Arnold H. Krogstad, Air Corps, (now Lieut.-Colonel) officiated at the original muster, the result of which was Federal recognition as the 119th Observation Squadron, 119th Photo Section and the Medical Department Detachment, 44th Division Aviation.

The Squadron's first year was spent at Newark Airport in Armory Training and Field Training, testing its wings, some of which had been in storage many years. Early in its second year, Lieut. Sloan was retired as a Captain for physical disability. The loss of his stewardship was somewhat mitigated by the fact that he established residence in Cranford, N.J., and it is felt that he is still with us. Major Robert L. Copsey assumed command in January, 1931, and is still serving in that capacity. Major Copsey was trained in 1917 at Kelly Field. He remained in military and civil aviation and received his Majority in the Air Reserve in 1928. He relinquished this commission to join the National Guard. The late Lieut. John Kase served a short period of time as Instructor and was particularly valuable to the organization during the 1931 Air Corps Maneuvers, in which this Squadron participated with considerable success. Lt. Kase was succeeded by Capt. William J. McKiernan, Jr.,who is still filling that assignment very effectively.

This organization now has two large hangars and a two-story Administration Building, located to the southeast of the "World's Busiest Airport",where it has been our pleasure to be host to over fifteen hundred visitors annually. Our friends in the Air Corps and other governmental services are believed to visit us because we take good care of them and not entirely because of our proximity to New York City. There are over one hundred scheduled arrivals and departures daily at Newark Airport. This has created a special operating situation which we believe is not experienced by other Air Corps units. It has required us to adopt Airline procedure in clearing, receiving, and in flight discipline here in the airdrome area. We realize how nice it will be to have an airdrome of our own to use, and to some degree restrict other air traffic. Yet, we feel that, from a training standpoint, our location here at Newark has proven a very valuable one, since we can observe the operations of the Airlines at such close range.

Each year, we have been called upon for our full quota of cooperative missions with the Artillery, Anti-aircraft, and other arms. This has proven to be very valuable training, reaching it climax last year in our participation in the Maneuvers at Pine Camp, New York, during which time we were assigned as Army, as Corps, and as Division Aviation. The organization experienced no difficulties in carrying out successfully every type of mission assigned to it. It proved to be a healthy experience to operate in the field as a unit, living and working with five other complete squadron units under actual conditions of Army Field Operations.

Our Summer Training this year will be at Camp Dix, from July 5 to 19, at which time we would enjoy very much to be hosts to any visiting officers who might look in on us.

Our flight directive is made particularly flexible as it would pertain to navigation, employment of radio, computation and interception practice. It has been found that interest in flying military missions is greatly enhanced by the diversification. It was our good fortune to render valuable service in emergencies at sea and on land. The search for a lost airliner in sub-zero weather in upper New York last December was a difficult and most unpleasant assignment and yet three officers voluntarily gave their time and abilities to that emergency. During the disaster at sea of the S.S."Morro Castle",pilots and observers of this organization saved many lives by directing rescue boats to those persons floating beyond the vision of surface searchers. Commendations are still being received as a result of this work.

Death has come to some who once flew with us and in every instance it occurred in line of duty. Each and every one of them gave a valuable contribution to the esprit-de-corps of the outfit.

NATIONAL GUARD AIR CORPS

By Major Ralph P. Cousins, Air Corps (National Guard Bureau).

THERE are 19 Observation squadrons, each with a photographic and attached medical section, in the National Guard of the various States. Eighteen of these are assigned to National Guard Divisions; one, the Arkansas unit, with no division assignment, is designated for corps use. New as Guard units after the war, they were organized and given Federal recognition during the years 1921 to 1930.

They are made up of 411 officers and 1,908 enlisted men. Of the officers, 318 are rated as pilots and 68 as observers without pilot ratings.

Initially, the units were equipped with five training type airplanes, furnished as a free issue from wartime stock by the Regular Army. These have been replaced successively by newer training types, and then by service types, so that now each unit is authorized eight service type Observation planes. Despite critical shortage of funds in recent years, the Bureau has met the increasing costs of this equipment, and today the units are practically up to authorized strength.

In their operation, the States furnish the airdrome and hangar facilities. The Federal Government furnishes the planes and allied technical equipment and provides pay for the Federal caretaker mechanics and all personnel in the units.

Pilots have received their training in various ways. Approximately 50 per cent are war-time pilots. Of the remainder, about one-half are graduates of the Air Corps Training Center, and the other half have been trained in commercial schools or locally in the units. Practically none of the observers are war-time officers. Most of them have received their training within the organization. Ordinarily they enlist for this training and, upon completion thereof, are examined for rating and are given a commission at the time the rating is issued. A policy now established provides an average of ten observers per unit.

All training is directed toward the development of a well rounded observation unit. Flying is done on prearranged schedules, in accordance with training programs established for the units by the War Department and Corps Area Commanders. Missions such as would be performed in war in artillery observation, infantry contact and liaison, and aerial photography, using radio and other means of communication, are performed under conditions approaching as nearly as possible those to be encountered in actual service. This is done at prescribed drill periods or at other times. Planes are always available for the use of pilots for either day or night missions, and pilots are encouraged and required to fly regularly and frequently. Initially this flying was confined largely to day-time missions in good weather. In the formative years, pilots averaged approximately four hours per month. With the development of planes, engines and flying instruments, however, this training has progressed until in the last two years all pilots in the Guard have averaged over 100 hours per year on day and night missions, in both good weather and bad.

During the summer training camps, every effort is made to train units in cooperative missions with ground forces. Particular stress in this work is made on performance of air-ground communication and liaison, using radio, visual signals and a system of pick-up and drop messages. Many hours are spent in flying missions for the training of anti-aircraft artillery in tracking and sound location, and in towing targets for anti-aircraft and light artillery fire. These cooperative missions ordinarily are limited by the amount of time the ground forces can devote to them, bearing their other ground training missions in mind.

In the development of Regular Army aviation, and based on the increasing performance of planes and the elimination of bad weather and darkness as limiting factors to continuous flight, the Army Air Corps has developed an Air Force, made up of Bombardment, Pursuit and Attack. In this way they have largely departed from the war-time conception of limited operation and direct support of ground troops. As this development has continued they have grown away from Observation aviation, which has been left more and more the responsibility of the National Guard. Thus it happens that these units will be called on in war to carry almost wholly the responsibility of all ground force observation up to that for the Army.

Since Observation squadrons and planes in the squadrons will operate in war mostly as individual airplanes, or small formations, and will not be called on for mass formation fighting, no particular effort is made to group the planes of several squadrons in mass formation. When, on special occasions, it has been done, the results have been gratifying. A notable instance was the Guard participation in the 1931 Air Corps Demonstration Maneuver, for which each Guard unit was called on to furnish five planes. These were grouped into a wing, made up of three groups, with a total of 95 planes. This wing participated as a unit in all the difficult flying of the entire maneuver without a single casualty to any of the participating personnel or planes. Lesser concentrations have also occurred at National Guard conventions and the National Air Races. At the National Guard convention in Nashville last fall, there were 60 National Guard planes, and at the National Air Races in Miami in January, 1935, practically every serviceable National Guard plane was present.

The ground facilities and general ground organization are of great importance in the peace-time development of aviation. During the period when the Army was called on to carry the air mail, the National Guard placed all its facilities at the disposal of the Air Corps. These were utilized in the most gratifying way. National Guard airdrome facilities and the mechanic personnel formed the background for the Army network on all lines. In addition, the Guard turned over to the Air Corps during this effort, 53 of its best and newest planes. It would have been impossible for the Air Corps to have operated as efficiently as it did without the assistance of the National Guard.

Thus these units have grown to their present important place in our scheme of national aerial defense. Each year their value becomes more apparent to the ground command of the National Guard and the Army. Their relations with their ground commands and with the Army Air Corps are cordial. They are developing well and will answer "Present" when the roll is called in our next National Emergency.

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MILITARY RECORD OF MAJOR-GENERAL ALBERT HAZEN BLANDING
Chief of the National Guard Bureau

BORN in Lyons, Iowa, November 9, 1876. Moved to Florida with his parents in December, 1878. Graduated from the East Florida Seminary (State Military Academy) No. one in class of 1894, with rank of cadet first lieutenant and battalion adjutant.

Enlisting in Gainesville Guards, F.S.T., in 1895, General Blanding served as an enlisted man in that organization until its disbandment prior to the Spanish-American War. On September 23, 1899, he was commissioned a Captain in the National Guard of Florida and assigned as Regimental Adjutant, 2nd Infantry. He was commissioned Major in 1906, Lieut.-Colonel in 1908, Colonel in 1909, and commanded the 2nd Florida Infantry in Mexican Border service from June, 1916, to March, 1917.

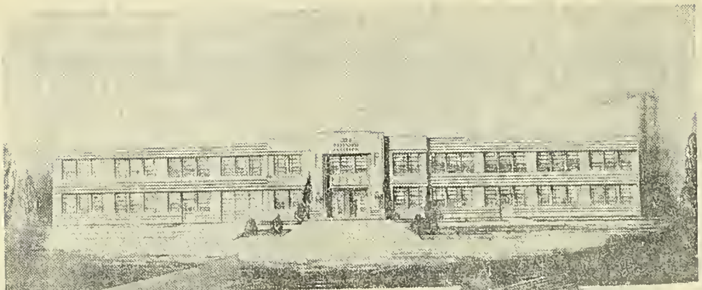
Mustered into Federal service for the World War, August 5, 1917, he was appointed Brigadier-General by the President, August 30, 1917, and assigned to command the 56th Depot Brigade, 31st Division. Upon the breaking up of this brigade in October, 1917, he was attached to command the 56th Artillery Brigade of the same division. In December, 1917, he was assigned to command the 185th Infantry Brigade, 93rd Provisional Division, going overseas with his organization in April, 1918.

Sent to the front three days after arrival in France, General Blanding was attached to the 16th (French) Infantry Division for observation and instruction and served with them for about ten days. Late in April he was attached to the 2nd American Division, and served with it until June 15, 1918. He was then attached to the 63rd Brigade of the 32nd American Division and served with it in defensive operations in the Rouge Mont Sector in Alsace until about July 10, 1918, when he was ordered to the Fifth American Division in the St. Die Sector in Lorraine where he commanded the north sub-sector of the line held by that division and manned by the 60th U.S. Infantry, the 137th French Infantry and one battalion of the 1st Alpine Chasseurs.

On the withdrawal of the 5th Division from the line of that sector, he was ordered to the 27th American Division to command the 53rd Brigade, taking over on the night of August 30th with the brigade in the line in Deckaboush Lake Sector between Ypres and Mt. Kemmel, Belgium. He commanded the troops of this Division which were used in the taking of Vierstraate Ridge and in the assault on Wycheate Ridge, August 31st to September 2nd. From there he proceeded with the 27th Division to the Somme Area and commanded the troops used in the preliminary attack on the Hindenburg line, September 27, 1918, and the 53rd Brigade in the main attack on September 29, 1918. On the afternoon of that day he was placed in command of all the Infantry of the Division. He commanded his brigade in the advance after the breaking of the Hindenburg Line to the vicinity of Le Cateau, including the Battle of the Celle River, October 17-22, 1918.

On the final withdrawal of the 27th Division from the line, General Blanding was ordered to command the 184th Brigade of the 92nd Division, and joined it on November 2, 1918, near Pont a Mousson, opposite Metz, being in the line there at the declaration of the Armistice. He relinquished command of this Brigade in Brest, France, in February, 1919, and returned to the United States as troop commander on the U.S.S. PRESIDENT GRANT, with part of the 41st Division and casuals. He was discharged March 1, 1919.

Awarded the D.S.M., one divisional citation from Hq. 27th Div., and one citation from G.H.Q., A.E.F. Appointed Major General of the Line, and assigned to command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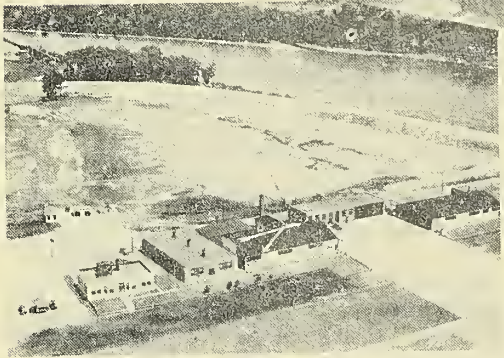
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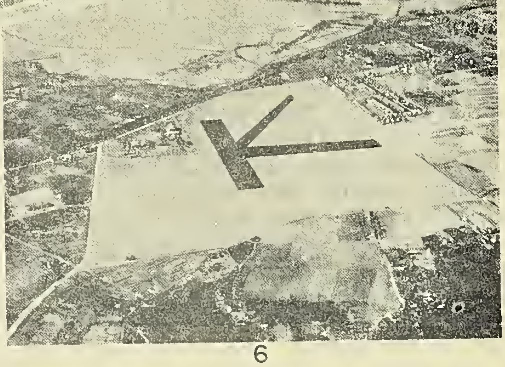
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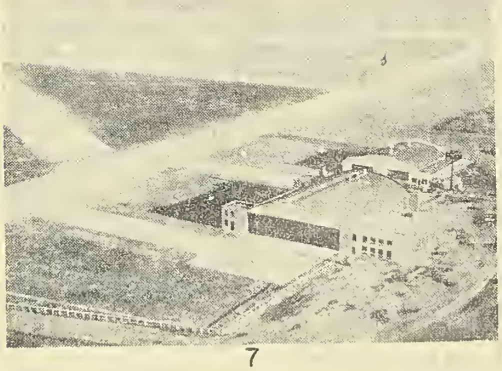
A I R P O R T S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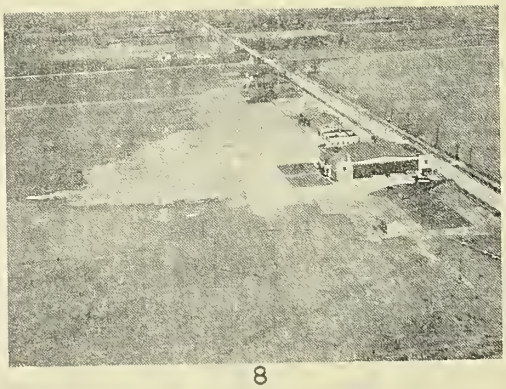
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the 31st Division on October 15, 1924.

General Blanding was awarded the Active State Service Medal on April 8, 1929, and the Florida Cross on July 21, 1932. On January 31, 1936, he was appointed Chief of the National Guard Bureau.

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POLAR EXPLORATION PLANE GOES TO MUSEUM

The veteran Northrop Gamma "Polar Star," in which Lincoln Ellsworth and his pilot, Lieut. Herbert Hollick-Kenyon successfully spanned the Antarctic continent between November 22nd and December 5th, last, arrived at Bolling Field, D.C., on April 30th, where it was accepted by officials of the Smithsonian Institute. The plane arrived at Bolling Field from Floyd Bennett Airport, Brooklyn, N.Y., at about 1:30 p.m., being flown by Lieut. Hollick-Kenyon.

Mr. Ellsworth had been in the city two weeks previously, when he was awarded the Hubbard Gold Medal, highest award of the National Geographic Society, by President Roosevelt for "Heroic and extraordinary achievement in Arctic and Antarctic exploration, 1925-1936." On the same evening, April 15th, Mr. Ellsworth spoke at Constitution Hall in Washington to a large group of dignitaries, and outlined new geographic knowledge resulting from his flight and described the experience of himself and Hollick-Kenyon. Among those present at the lecture were Major-General Oscar Westover and Brigadier-General and Mrs. Henry H. Arnold.

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AIR MANEUVER IN SAN ANTONIO CELEBRATION

At 4:00 p.m. on Friday, April 24th, nine Pursuit airplanes, led by Captain C.K. Rich, and nine Bombardment airplanes, led by Capt. W. E. Whitson, took off from Kelly Field, Texas, on a training maneuver involving the interception of Bombardment airplanes by the Pursuit formation. At the same hour, a 4-mile long "Battle of Flowers" parade in commemoration of the 100th anniversary of the Battle of San Jacinto, began to weave through the streets of San Antonio. Hundreds of beautiful floats attracted thousands of people. This throng was surprised and fascinated by the two formations of airplanes which approached the parade route close enough to enable pedestrians to follow their movements.

Captain H.R. Yeager, in a BT airplane, was circling above these formations with a member of the Reserve Corps as his passenger to act in the capacity of radio announcer. The signals from this BT plane and from the Pursuit plane flown by Captain Rich were picked up by one of the local broadcast stations and re-broadcast over the Southwest chain of stations. Captain Yeager gave a very good description of the maneuvers being performed by the airplanes, an outline of the problem and the tactics involved. His passenger followed this by an interesting description of the parade as it appeared from his position high in the air over San Antonio. One of the regular announcers of the broadcasting station followed this with a description of the individual floats as they passed just beneath his improvised reviewing stand on the balcony of a local hotel. The broadcasting station reports that many favorable comments were received from residents all over the State and added that they considered the broadcast not only very successful and interesting but educational as well.

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KEY TO NATIONAL GUARD AIRPORTS

The composite illustration opposite this page, showing airports of various National Guard Division Aviation units, are identified below, as follows:

1. Proposed new hangar for the 108th Observation Squadron at Chicago Municipal Airport.
2. Cleveland Airport, 112th Observation Squadron, Ohio National Guard.
3. Griffith Park, Los Angeles, Calif., 115th Observation Squadron, California National Guard.
4. Newark Airport, 119th Observation Squadron, New Jersey National Guard.
5. Brainard Field, Hartford, Conn., (before the flood), 118th Observation Squadron, Connecticut National Guard.
6. Logan Field, Baltimore, Md., 104th Observation Squadron, Maryland National Guard.
7. Lambert-St. Louis Municipal Airport, Robertson, Mo., 110th Observation Squadron, Missouri National Guard.
8. Stout Field, Indianapolis, Ind., 113th Observation Squadron, Indiana National Guard.

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TOWING TARGETS FOR MECHANIZED CAVALRY

One officer and seven enlisted men of the 15th Observation Squadron departed from Scott Field, Belleville, Ill., for Fort Knox, Ky., to tow aerial targets for the 1st Cavalry (Mechanized) during the period May 1st to June 1st. They are: 2nd Lieut. Jack S. Bond, Air Reserve, Privates D.K. Phillips and C.C. Mitchell, pilots; Sergeants B. Maxam and J.R. Whitson, tow target operators; Staff Sergeants G.H. Sparling and G.E. Brown, crew chiefs; and Sergeant A.T. Henderson, chauffeurs.

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At the end of the working day on May 1st, 2,000 sq. yards of reinforced concrete had been laid on the new airplane apron at Scott Field, Ill., representing about one-sixth of the total concrete to be laid.

THE AIR CORPS TRAINING CENTER

The mission of the Air Corps Training Center is to turn out young military pilots competent to undertake the duties of second lieutenant in an Air Corps tactical squadron. The organization of the combat squadrons requires a high ratio of young pilots to be officers of the higher grades. This ratio is maintained by sending each year from 200 to 250 pilots, trained at the Air Corps Training Center, to tactical squadrons of the Regular Army. These young pilots are continued on active duty as Flying Cadets during one year, and if their service shows them to be competent, they are then commissioned as second lieutenants, Air Reserve, and given a further year of active duty.

There is legislation now pending designed to authorize the calling to active duty of 1350 Reserve officers for periods of five years each. This would enable the selection each year of approximately 270 graduates of the Training Center for duty with tactical squadrons. The proposed law provides for the payment, upon discharge after a minimum of three years' active duty, of a bonus of $500.

The Training Center is organized to receive new classes at the Primary Flying School at Randolph Field, Texas, every four months. Each class has four months in the Primary Stage and four months in the Basic Stage. They then move over to Kelly Field for their last four months at the Advanced Flying School where they are graduated as pilots. "Primary Training Airplanes" or PT's are flown by trainees during the Primary Stage. In the Basic Stage training is conducted in BT airplanes, which are larger, speedier and more maneuverable, and which provide an intermediate step in piloting between the PT's and the service type planes, such as Pursuit, Bombardment, Attack and Observation, which are used in the flying training at the Advanced Flying School.

Since a knowledge of the equipment he is flying is essential to the student, and a continuous diet of flying would make a student "stale," it is convenient and advantageous to combine with the flight training, ground instruction in airplane engines, theory of flight, radio, ground gunnery, air navigation, meteorology, flight maps, airplane maintenance and other subjects. This ground instruction is continued until graduation. At the Advanced Flying School it emphasizes the tactics of each class of aviation - Bombardment, Attack, Observation and Pursuit.

The Flying Cadets, with the exception of a few ex-enlisted men from the Army, are drawn entirely from civil life. They are selected from candidates between the ages of 21 and 27 years who have successfully completed at least two years in a college or university and who are in excellent physical condition. College graduates, however, receive priority in the selection of students.

In the period of one year at the Training Center the young student receives a total of 323 hours' flying instruction. As a result of this intensive instruction carried on almost continually throughout the year, the students put in a tremendous number of flying hours per year.

About 45% of the students entering the Primary Flying School successfully complete the course and graduate from the Training Center. Most of the failures are due to unsatisfactory progress in flying. Therefore, the fact that a candidate has passed the rigid physical and educational requirements does not insure his graduation. This indicates that there are other factors that made up the potential military airplane pilot that are not being given consideration in the selection of students. The Training Center, and especially the School of Aviation Medicine, are studying this problem and with very promising and positive results. Success in being able to determine readily those possessing sufficient aptitude or other essential qualities for rapid progress in military flying would be of the greatest value in a national emergency.

Candidates for flying training who lack the required educational credentials must demonstrate their proficiency by successfully passing examinations in United States History, English, General History, Geography, Higher Algebra, Geometry, Trigonometry, and Physics. Practically all who finish at the Primary Flying School graduate four months later from the Advanced Flying School. The graduate who completes his year of active duty, under his status as a Flying Cadet, with a tactical squadron, and his additional year or more of active duty with a tactical squadron, under his status as an Air Reserve officer, and who then reverts to his former civilian status, may and can maintain active contact with the Service through membership in the National Guard or Organized Reserves. Furthermore, as a civilian with this wealth of flying experience behind him, he is in a favorable position to seek employment with a commercial aviation company. Then, too, there is the recent possibility of securing a permanent commission in the Air Corps.

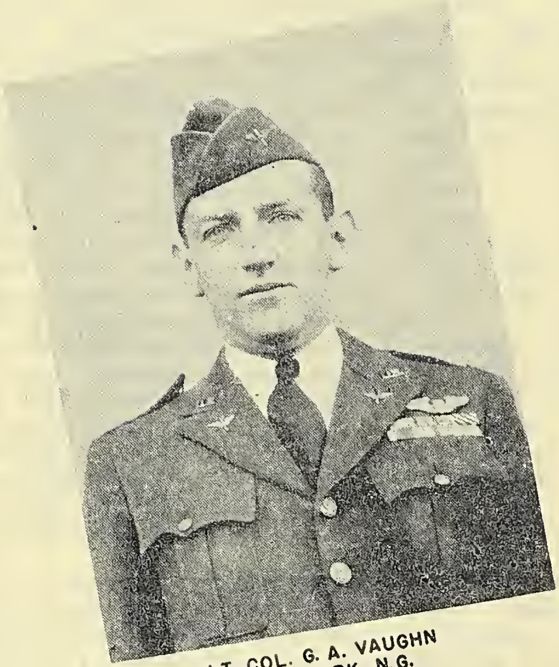
A Day at the Training Center

During the afternoon most men devote themselves to some form of voluntary athletics. This takes the form of a bitterly contested kittenball game, a set or two on the tennis courts, a battle of strikes and spares on the local bowling alleys, a red hot ping pong series, or even a rubber of raucous bridge barring no "holts." The surroundings are ideal. Randolph Field is the most beautiful and well appointed military post in the Army. The Air Corps has a justified reputation of free-and-easy hospitality. San Antonio is a delightfully friendly city, combining the charm of the old South with the dash of dusky Mexico and the modernism of the West.

Routine flying is conducted in the morning, each student being in the air from 25 minutes to two hours, depending upon the progress he has made in the flying course. Ground school work is also conducted in the morning, and some of it in the afternoon, which is also devoted to drill with the rifle. However, there is plenty of time left for athletics and rest. Later on in the flying course, two nights a week are devoted to night flying training.

N. G.

LT. COL. J. N. JEFFERS
CALIFORNIA N.G.

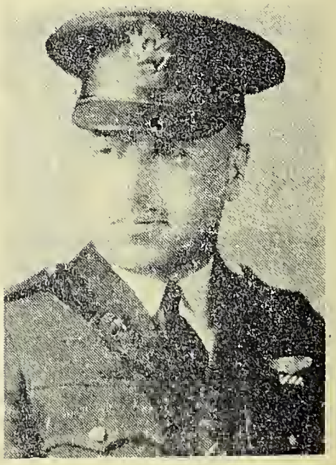


LT. COL. G. A. VAUGHN
NEW YORK N.G.

MAJ. ERROL ZISTEL
OHIO N.G.

OFFICERS OF DISTINGUISHED WORLD WAR SERVICE

LT. COL. H. W. COOK
INDIANA N.G.



MAJ. WM. TIPTON
MARYLAND N.G.

LIEUT.-COLONEL JOHN N. JEFFERS

Born in Los Angeles, Calif., December 9, 1895. Graduate of Polytechnic High School of Los Angeles, Calif., and of Stanford University, Calif., (A.B. degree).

Enlisting in the Aviation Section, Signal Corps, August 15, 1917, he received his advanced flying instruction at the French aviation schools at Tours and Issoudun. Following his appointment as a 1st Lieutenant, he took a course of instruction at the aerial gunnery school at Cazeaux. In April, 1918, he was attached to the 94th Pursuit Squadron at the front, and participated in intensive patrol and combat operations with this unit. He is credited with the destruction of two enemy aircraft in aerial combat.

Decorations: Croix de Guerre (France); Distinguished Service Cross (U.S.).

Col. Jeffers is now Air Officer of the 40th Division Aviation, California National Guard.

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LIEUT.-COLONEL GEORGE A. VAUGHN

Born in Brooklyn, N.Y., May 20, 1897. Graduated from Adelphia Academy, Brooklyn, N.Y., in 1915, and from Princeton University with the degree of B.S. in 1920.

Enlisting in the Aviation Section, Signal Corps, June 29, 1917, Col. Vaughan performed most of his active service overseas. He was commissioned a 2nd Lieutenant on February 7, 1918, and 1st Lieutenant on March 8, 1918.

Col. Vaughn received his ground school training at the School of Military Aeronautics, Princeton University, and his flying training in England, following the completion of which he was assigned to the 84th Squadron, R.A.F. He served with this organization until August 28, 1918, when he was assigned to the 17th U.S. Aero Squadron.

Rated as the second living "Ace" of the U.S. Air Service, Col. Vaughn is officially credited with 13 victories over enemy aircraft. He was awarded the British Distinguished Flying Cross and the U.S. Distinguished Service Cross, the latter decoration for extraordinary heroism in action near Cambrai, France, Sept. 22, 1918. While leading an offensive flight patrol, he sighted 18 enemy Fokkers about to attack a group of five Allied planes flying at a low level. Although outnumbered nearly 5 to 1, he attacked the enemy group, personally shot down two enemy planes, the remaining three planes of his group shooting down two more. His courage and daring enabled the group of Allied planes to escape. Again, on Sept. 28, 1918, he alone attacked an enemy advance plane which was supported by 7 Fokkers, and shot it down in flames.

Col. Vaughn was honorably discharged from the service, February 7, 1919, and is now Air Officer of the 27th Division Aviation, New York National Guard.

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Lieut.-Colonel Errol Zistel

Born in Sandusky, Ohio, July 16, 1895. Graduated in 1915 from St. Johns Military Academy, Delafield, Wis. Enlisting in the Aviation Section, Signal Corps, April 17, 1917, he was assigned to duty as student at the Curtiss Aviation School at Newport News, Va., from which he graduated July 28, 1917. Shortly thereafter he was assigned as student at the School of Military Aeronautics, Ohio State University, and, following his graduation therefrom, was ordered to duty overseas, receiving additional flying training, also instruction in aerial gunnery, in various British aviation schools. Upon the completion of his training, he was assigned to the 43rd Squadron, Royal Air Force, for duty in France. On July 2, 1918, he was transferred to the 148th U.S. Aero Squadron, and he was on duty therewith until he was wounded in action on Sept. 24, 1918. Col. Zistel was honorably discharged from the service on December 26,1918.

Col. Zistel is credited with the destruction in aerial combat of three enemy aircraft. He is now Air Officer of the 37th Division Aviation, Ohio National Guard.

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LIEUT.-COLONEL H. WEIR COOK

Born in Wilkinson, Indiana, June 30, 1892. Arriving in France about one month prior to America's entry into the war, he enlisted in the French Army, served therewith for six months and then obtained his release to join the U.S. Air Service in France. He served at the front as a member of the 94th Aero Squadron and participated in much of the aggressive combat and pursuit work of this Squadron. He is officially credited with the destruction of 7 enemy aircraft (3 airplanes and 4 balloons), thus bearing the unofficial designation of "Ace." For six months following the signing of the Armistice, he was stationed at Coblenz, Germany, with the Army of Occupation. He was promoted to Captain, March 18, 1919.

Decorations: Distinguished Service Cross (U.S.); Medaille Commemorative (France).

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LIEUT.-COLONEL WILLIAM D. TIPTON

Born in Jarrettsville, Md., Dec. 11, 1892. Graduated from Western Maryland College, A.B. deg., in 1910; B.S. deg. Johns Hopkins University,1921.

Enlisting in the Aviation Section, Signal Corps, in May, 1917, he graduated from the School of Military Aeronautics, Ohio State University, in August, 1917, and in that month was ordered to duty overseas. He was a student at the aviation ground school, Oxford University, England, graduating in Oct. 1917, and received his flying training in the Royal Air Force. Commissioned a 1st Lieutenant, U.S. Air Service, in Feb. 1918, he saw active service with Squadron No. 3, Royal Air Force, March to July, 1918. In July and August, 1918, he was flight commander with the 17th U.S. Aero Squadron. On August 28th he was taken a prisoner of war and released in December, 1918. During his active flying service at the front, he participated in both the Somme and Lys defensives, and is officially credited with the destruction of two enemy airplanes and one balloon. He was honorably discharged from the service, February, 1919, and later commissioned a Captain in the Air Reserve.

In 1921, Col. Tipton became a member of the Maryland National Guard Aviation. He is now the Air Officer of the 29th Division Aviation.

BUYING MILITARY AIRPLANES

By Major-General Oscar Westover, Air Corps,
Chief of the Air Corps

The numbers of each class of airplane which should be bought is a subject that has been uppermost in the deliberations on aviation programs and organization for several years. This question looms large in considerations not only in our own country but in all the leading air powers of the world. It constituted one of the most important items of study by the War Department Special Committee on the Army Air Corps, which was headed by the Hon. Newton D. Baker, and which held its sessions in Washington during the middle of 1934.

The determination of the proper ratio of Pursuit aviation to Bombardment aviation in the make-up of the fighting air force of the country, and the number of observation airplanes needed to serve the ground armies have long been taxing the authorities. The Baker Board arrived at a ratio of 52% of Pursuit airplanes to 48% Bombardment airplanes. This ratio constituted a considerable increase in the proportion of Bombardment over what had been adopted under the Air Corps Five-Year Program, formulated in accordance with the Air Corps Act of 1926. Under this program the ratio was 79% Pursuit to 21% Bombardment.

A study submitted for the consideration of the Baker Board showed that in 1934 in the air forces of the leading air powers the average proportion of Pursuit to Bombardment was 58% to 42%. This higher proportion of Bombardment in the foreign air forces to that obtaining in our own service no doubt influenced to a considerable degree the final recommendation upon this point which was submitted by the Baker Board. It will be recalled that this recommendation called for 52% Pursuit to 48% Bombardment, as compared with an average in leading foreign powers of 58% to 42%. This increase in Bombardment, recommended by the Baker Board, was in accordance with the clearly indicated trend in this direction as revealed by a study of the foreign air forces over a period of years.

This tendency to increase the proportion of Bombardment has continued since 1934. Data for foreign air forces considered fairly accurate shows the following ratios of Pursuit to Bombardment:

Germany	29% Pursuit to	71% Bombardment
Great Britain	35% Pursuit to	65% Bombardment
Italy	52% Pursuit to	48% Bombardment

It will be noted that the percentage in Italy is exactly the same as that recommended by the Baker Board. France has 61% Pursuit to 39% Bombardment, and Japan has 66% Pursuit to 34% Bombardment. It is believed that both France and Japan have programs calling for an increase in their Bombardment airplanes.

The average ratio for these five foreign powers is now 44% Pursuit to 56% Bombardment, an increase of 14 percent in Bombardment in two years. Compare this with the Army Air Corps program which shows a predicted status for June 30, 1937, of 45% Pursuit to 55% Bombardment. The foregoing data appear to indicate that airplane programs in our own case, as well as in those of the other leading air powers, are greatly influenced by "what the other fellow is doing." For lack of a better guide, this is probably a common sense procedure.

Of course, it is fairly certain that the proper proportion of the various classes of combat aviation which should be included in an effective air force should be predicated upon more basic considerations than simply a comparison with what the other nations are doing. Studies are constantly being developed with this objective in view. The Air Corps Tactical School at Maxwell Field, Ala., carries on, from year to year, an intensive study of this matter from the theoretical standpoint. Now that we have a General Headquarters Air Force, this organization is carrying on this study from a practical standpoint. It must be readily apparent that these practical studies are essential to reaching adequate conclusions upon the subject of the proper proportion of Pursuit aviation to Bombardment aviation in an efficiently organized air force.

This decided trend toward an increased number of the larger sized airplanes has complicated the procurement programs of all the important air powers. Larger airplanes cost more! Procuring officers have found it impossible to buy the number of airplanes carried in the budget. Coupled with the increase in size of the airplanes themselves is an increase in the number and cost of the "gadgets" required to equip them. These two principal items furnish the answer to the question frequently asked: "Why hasn't the Air Corps got more airplanes?"

Applying this answer specifically, let us consider the first program prepared after the passage of the Air Corps Act of 1926, that for the Fiscal Year 1927, we find that 139 Pursuit airplanes were included and only 65 Bombardment. However, by the Fiscal Year 1937, just ten years later, only 78 Pursuit are included in the procurement program and 184 Bombardment are to be bought. The following are only a few of the items of equipment to be found in the 1937 Bombardment airplanes which were not available for use in 1927:

Automatic Pilot
Flaps
Radio Compass
Radio Direction Finder
Gyro Turn Indicator
Electric Bomb Release
Automatic Controllable Propellers
Instrument Landing Equipment

Retractable Landing Gear
Electric Remote Control for Wing Guns
Automatic Propeller Synchronizers

In addition to the above list, it is to be noted that many of the instruments and articles of equipment used in the 1927 Bomber have been so greatly improved that their cost in 1937 is considerably in excess of what it was in 1927.

We find that in the Fiscal Year 1927 estimates to the Appropriation Committee of the House of Representatives the unit cost of Pursuit airplanes was placed at $33,500, and of Bombardment at $64,000. In the Fiscal Year 1937 estimates, the unit cost of Pursuit was placed at $30,000, and the average unit cost of three types of Bombardment at $115,000.

Now if we apply these 1937 unit costs to the ratio of the two classes which existed in 1927, we find that, instead of having a program for 1937 of 78 Pursuit and 184 Bombardment, we would have a plan to buy 179 Pursuit and only 83 Bombers. And these planes would cost only $14,915,000 instead of the $23,540,000 actually allotted to the 1937 procurement.

In other words, if we still retained the 1927 policy as to the proportion of Pursuit to Bombardment airplanes, in 1937 our 262 airplanes of these two classes would cost us $8,425,000 less than under our present policy covering the ratio of these two classes. For this saving, and employing the same ratio, we could buy 147 more airplanes, or a total of Pursuit and Bombardment for 1937 of 409 instead of 262.

In view of this important increase in the number of combat airplanes, we should be able to procure by reverting to the policy of ten years ago, it is essential that we should be sure we are correct in our present policy. To reassure us on this point, we have, first, the fact that two leading air powers, Great Britain and Germany, are buying an even greater proportion of Bombardment airplanes than we are, while a third, Italy, is buying the same proportion. Secondly, the maneuvers of the GHQ Air Force show that this increased number of Bombers meets the requirements of air force operations while a smaller number does not.

It is believed that the people of the United States can derive considerable satisfaction from the thought that the military airplanes they are buying are as good as those of any other country, and that the proportion of the various classes is maintained in such a way as to insure, as far as is humanly possible, a well balanced Combat force designed to afford the maximum in air defense for the money expended.

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HOW TO SECURE A FLYING CADET APPOINTMENT

Young men interested in adopting flying as a career, and anxious to take advantage of the opportunity afforded them to obtain flying training free of cost at the Army Air Corps Training Center, often ask the question - "What must I do to secure a Flying Cadet appointment?"

The answer is very simple. Write a letter or post card to The Adjutant General of the Army, War Department, Washington, D.C.; or to the Chief of the Air Corps, War Department, Washington, D.C., or to the Secretary of the Air Corps Training Center, Randolph Field, Texas, and simply say: "Please send me information and application blanks relative to securing an appointment as a Flying Cadet in the Army Air Corps." Such a request will receive immediate attention.

If you will turn to page 32 of this issue of the News Letter, you will note the eligibility requirements incident to Flying Cadet appointments. It may be stated here that young men who, this year, fulfill the entrance requirements may expect to receive an appointment, as there are a number of extra vacancies.

Here are some of the alluring prospects ahead of the Flying Cadet:

An intensive one-year course of flying and ground instruction under a system generally conceded to be superior to any in the world.

A salary of $75.00 a month while undergoing training; also a ration allowance of $1.00 per day.

Uniforms and equipment free of cost.

Appointment as 2nd Lieutenant, Air Reserve, upon completion of the year's flying course and graduation from the Advanced Flying School, and assignment to active duty with an Air Corps tactical squadron for a period of from three to five years.

Promotion to 1st Lieutenant upon completion of three years of such active duty, followed by active duty as a 1st Lieutenant for remaining two years.

Pay, allowances and flying pay the same as Air Corps officers of similar rank in the Regular Army, while on such active duty.

A bonus of $500 upon discharge from the service after a minimum of three years of active duty.

An opportunity to secure a permanent commission in Air Corps, Regular Army.

A splendid opportunity to secure a remunerative position in commercial aviation, where graduates of the Air Corps Training Center are in demand, particularly so after they have gained more experience through serving several years of active duty with Air Corps tactical organizations.

An opportunity later to maintain affiliation with military aviation by joining the National Guard.

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON.

VOL XIX JUNE 1, 1936 No. 11.

VOL. XIX Air Corps News Letter NO. 11

Information Division
Air Corps

June 1, 1936

Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE POWER PLANT BRANCH AT WRIGHT FIELD

By a Test Engineer

ON days when there are two or three engines running in the dynamometer laboratory and a like number giving their all at the torque stand, the Power Plant Branch can make the propeller test outfits sound like a silent movie.

The fifteen to twenty civilian engineers are augmented by such celebrities as Major Page, Captains Minty, Gillespie, Lieuts. Irvine, Johnson, Klein and Smith. Major Page has just started his second tour as skipper of the Plant. Lieut. Irvine is Service Liaison Officer and has his troubles. Captain Gillespie, the representative-at-large, is on the road most of the time spreading the gospel. Captain Minty and Lt. Johnson are "king bees" over the Engine Installation Unit and Accessory Test Laboratory.

The business end of the Power Plant begins with the necessary shops for the repair and inspection of engines. A most unique method of engine disassembly by acetylene torches and sledge hammers has been developed here. On a few occasions when engines on test have had a connecting rod failure, the usual method of disassembly has failed and more persuasive means had to be used.

The remainder of the building is occupied by the accessory and dynamometer laboratories. The accessory laboratory is equipped to calibrate and test fuel systems, oil pumps, hydraulic pumps, vacuum pumps, tubes and fittings.

There are two types of dynamometer stands, one for air-cooled engines and the other for liquid-cooled engines. They are essentially the same, in that the power generated by the engine is absorbed through a water brake and electric dynamometer, both of which are mounted in a pivoted cradle attached to a scale for measuring the torque load in order to determine the horsepower. Two large fans on either end of the tunnel in the basement furnish an air blast equivalent to 150 miles an hour air speed as a cooling medium for air-cooled engines. Equipment is also at hand for running air-cooled engines with intake and exhaust conditions equivalent to any altitude up to 30,000 feet. One stand is installed in a cold room, in which the room temperature can be lowered to -60°F. This room is primarily used for engine starting tests and research problems under extreme temperature conditions. The remainder of the dynamometer laboratory is occupied by an assortment of liquid-cooled and air-cooled single cylinder stands used for cylinder, spark plug, fuel and research tests.

The building with the five white towers on the southeast corner of the field houses the torque stands and forms a part of the Power Plant establishment. As stated in previous articles, the engines are calibrated on the dynamometer laboratory and are removed to the torque stands for endurance testing. Certain phases of propeller testing are also conducted at these stands. There are seven stands in all, two for liquid-cooled and five for air-cooled engines. All stands are equipped for fuel, oil, and temperature regulation measurement.

The fuel test laboratory, a building all by itself, is ruled over by Lieut. Frank Klein. In the summer when the temperature in the offices is above 100°F, Lieut. Klein's laboratory, with its air-conditioning system, becomes very popular for conferences. Four variable compression, single-cylinder engines and one Diesel single-cylinder engine form the nucleus of the equipment to determine how many knocks are in anti-knock gasoline. Lieut. Klein and his personnel are continually endeavoring to better the quality of the gasoline used by the Air Corps.

It is impossible to describe in a few words one of the busiest and most extensive activities at Wright Field. The officer personnel of the Power Plant Branch will be very glad to run a Cook's Tour at any time for all visiting firemen. Come and visit us.

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A flight, consisting of Lieut.-Colonel Ralph Royce, Major Alfred E. Kessler and Capt. Robert C. Oliver, in three new PB2-A airplanes, arrived at Selfridge Field on May 15th in 13 hours and 10 minutes of actual flying time from the Consolidated Aircraft plant at San Diego, Calif. The distance traveled is over 2100 miles.

AIR NAVIGATION BY INSTRUMENTS

By Colonel Junius W. Jones, Air Corps

SINCE the advent of airplane instruments and radios for navigation without outside visual reference, I have had many occasions to use this means to extricate myself from dangerous or uncomfortable situations. It was found that the information furnished on maps and the pilots' cross-country envelope was insufficient to enable one to select a new destination once he was in trouble.

As a result of these experiences and the ever increasing complications of the Department of Commerce radio facilities and airway traffic regulations, it was determined advisable to compile all available information of this nature into some accessible form that could be easily referred to in the cockpit. At first, only or principally the information furnished by the Department of Commerce was included in what I termed a "Radio Guide." As requirements demanded, other information, such as traffic regulations, beacon charts, barometric tables, etc., were included, which has completed a Guide that embodies sufficient data for instrument navigation in any part of the United States.

To determine the value and use of the Radio Guide, a questionnaire embodying ten items was submitted to 33 members of the flying personnel at Chanute Field, Ill., and the answers and comments obtained are to be used as a guide in revising and improving the present form. It is obvious, however, that many of those answering the questions did so without any practical experience in bad weather or night flying. The average amount of instrument flying, other than under a hood, per pilot, for the past year is approximately three hours. The average total pilot time is approximately 1,800 hours.

The ten questions above referred to are given below, as follows:

1. Does the Radio Guide contain sufficient information for instrument navigation in any section of the United States with radio aid?

2. Do you include a copy of the Radio Guide with your maps when making a navigation flight with a radio equipped plane?

3. Have you used the Guide in selecting a new course when unable to continue on to your destination on account of dangerous weather or when flyingthrough zero weather?

4. Is the information contained in the guide found to be the latest and most accurate available?

5. Are you able to fly by instruments and refer to any desired information in the guide with comparative ease? a. Day; b. Night.

6. Is the Guide properly arranged and sufficiently simple for the average pilot to use with but very little instruction?

7. Is there any other source of information in the form of maps, circulars, navigation cases, etc., now available in the service that could be substituted for the Guide?

8. Do you prepare the work sheet in advance?

9. Have you used the information contained in the Radio Guide to extricate yourself from a difficult or dangerous situation? If so, how many times?

10. Do you believe that the Radio Guide should be made standard for the Air Corps?

Answers received as a result of the questionnaire are tabulated below.

		Reporting		Not
		Yes	No.	Reporting
Question	1	27	0	6
"	2	24	7	2
"	3	4	27	2
"	4	27	4	2
"	5	10	19	4
"	6	26	3	4
"	7	4	18	11
"	8	24	3	6
"	9	4	27	2
"	10	24	0	9

Consensus of opinion on Question 10 was that such a Guide was essential in the Air Corps, but should be simplified to facilitate ease of handling and, if possible, reduced in size by including more information on smaller pages. Some few stated that they believed it should be adopted as standard, but should not be carried in the cockpit. Instead, it should be included in the map files of operations offices. Another states - Yes, if revisions could be furnished from a central point. Believe the Radio Guide should be divided into appropriate sections for geographical areas and made standard for the Air Corps. Recommend that the Guide be so arranged that necessary information for any particular route could be extracted and used more conveniently in the cockpit. One officer states that the Radio Guide has its maximum value as a reference guide.

Statistics indicate that only a small percentage of those reporting have ever encountered a dangerous situation where the Radio Guide would have been of material help to them. And even though our records show that the average instrument time per pilot in other than a hooded cockpit to be three hours, it is believed the average over zero or very low ceilings would not be more than thirty minutes.

Based upon the results of the examination on the Radio Guide it was decided to include in the training program an instrument navigation problem with radio aid, which problem is given hereinafter. Of the officers who have flown one of these problems to date, the results have been astoundingly unsatisfactory. The present plan is to continue this type of training with the ultimate aim being to bring the proficiency of each pilot up to the point that, when found in a dangerous situation, he will be able to extricate himself with comparative ease, or at least fly the airplane safely and intelligently select the proper alternative. This procedure will eliminate the danger of flying under very low ceilings or attempting landings in unsuitable fields which often result in disaster.

It is considered advisable to disregard the answers and comments of those pilots with but little experience and give more weight to those who have pioneered in this work. Even the answers to these questions, including the remarks, indicate that the average pilot is sadly lacking in the knowledge required for successful instrument navigation. It is estimated that at least fifty percent of the pilots at this station (Chanute Field) would prefer flying under dangerously low ceilings to flying by instruments at a higher altitude, which in my opinion is much safer. The examples that are quoted are to include emergencies only. It is not contemplated assigning or encouraging missions through weather over zero ceilings, but it is believed imperative for each pilot to have sufficient knowledge of this type of flying to recover from danger of this nature which he did not anticipate.

PROBLEMS IN INSTRUMENT NAVIGATION WITH RADIO AIDS

1. The following listed information is for the pilot taking the test. He will be assigned a problem in sufficient time prior to the take-off to enable him to study the course to be flown and make the proper preparation for the flight.

a. Radio and instrument equipment will be checked personally by the pilot taking the test prior to the take-off.

b. Barometric pressure will be obtained from the Post Operations Office by radio. The correction for this pressure will be applied to the altimeter and the setting of the index with the barometric pressure will be recorded on a small pad which will be found in the cockpit for that purpose.

c. Department of Commerce regulations pertaining to altitudes, distances from established airways, methods of reporting location, etc., will be strictly complied with.

d. In order successfully to pass this test, the pilot must proceed to his destination with the least practical delay, complying with all existing air regulations enroute. Excessive wandering from the course, variation in altitude, or undue delay in orientation will be considered disqualifying.

e. A sufficient number of weather broadcasts will be picked up enroute to insure the proper corrections for changes in barometric pressure for compliance with air regulations governing altitudes.

f. The problems are so designed to afford the pilot an opportunity for exercising considerable judgment in selecting a new course and destination in the event of dangerous or questionable weather becoming prevalent at the original destination or enroute after the take-off.

The following problem is for the information of check pilot only; and will be transmitted by interphone to the pilot undergoing test at the proper time:

Chanute Field to Cleveland via Lafayette, Indiana.

After passing over Lafayette and having arrived at a point approximately five miles beyond, the pilot will be instructed by the check pilot that weather conditions at various stations are as follows: Cleveland - ceiling dropped from 1000 feet to 500 feet during the last hour, wind NE 25, visibility one-half mile, temperature 28, dew point 26, barometer 29.52 dropping. With similar conditions prevailing at Chicago and Indianapolis. Chanute Field - visibility zero, blowing snow. Terre Haute - ceiling 1000, wind NE 15, temperature 36, dew point 30, barometer 29.65. St. Louis - ceiling unlimited, clear, visibility ten miles.

The pilot will be expected to change his course to Terre Haute and in the event that he shouldn't will be so instructed by the check pilot. Shortly before arriving over Terre Haute he will be given the approximate existing barometric pressure andtold that the ceiling is 500 feet. After dropping down to 500 feet over Terre Haute, he will then be instructed to return to Chanute Field.

When within five miles of Chanute Field, the radio will be turned to the interphone and pilot instructed that a weather broadcast will be transmitted from that station for a period of two minutes, after which time receiver will be again switched to radio. The pilot will be instructed to proceed to Chanute Field, dropping through an overcast to an altitude of approximately 500 feet over the field.

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Major Ernest Clark, Captain Earle E. Partridge and 1st Lieut. Charles H. Anderson departed May 18th for San Diego, Calif., to secure three PB2's from the Consolidated Aircraft factory and ferry them to their home station, Selfridge Field.

AERIAL GUNNERY PRACTICE FOR BARKSDALE FIELD "ATTACKERS."

THE 8th Attack Squadron, Barksdale Field, La., was recently ordered to Fort Crockett, Texas, for a period of two weeks for the purpose of conducting aerial gunnery for rear seat gunners with a view to developing combat teams.

The personnel consisted of 16 pilots and 63 enlisted men. Part of the enlisted men were attached from the 60th Service Squadron, 3rd Group Headquarters and 3rd Wing Headquarters. As soon as the nine Group and Wing men had finished firing the course, they were replaced by nine other enlisted men and two officers. A week later, one officer and nine enlisted men from the 8th Squadron reported in. All personnel were quartered and messed on the field. "They must be able to take it, too," comments the News Letter Correspondent, "for in spite of the fact that the sea gulls could tell no difference between the airdrome and the Gulf of Mexico, no one was afflicted except for a few head colds and a lot of mosquitoes."

The mess was well handled and run without profit or loss. The customary growling was lacking, and there was always a rush in the direction of the mess tent around meal time.

Operations were considerably hampered by bad weather and a wet field. Fortunately, the Fort Crockett airdrome has a hard sand base, so that airplanes sink no further than the water level. It was necessary to remove the "pants" to facilitate landings and take-offs. All available time was used to good advantage. Once a ship was caught out and unable to return because of fog until the next morning, the night being spent at Houston.

Two 8-mile courses were used, both lying along the beach, and it required 4 gunnery planes and 4 towing planes to keep both courses in continuous operation. To complete the training, a total of 283:40 hours was flown, averaging 5:33 hours per gunner.

The results were gratifying. Of the 51 men who fired the course, 26 (51%) made "Expert," and 34 (67%) qualified. The total number of rounds fired was 60,244. It takes a lot of firing to wear out 8 gun barrels. The two greatest troubles experienced were caused by the breaking of sears and the breaking or binding of the front sights. Of the 44 malfunctions of armament which necessitated landings, 25 were caused by the sears breaking.

A lot of laughs were had at the story one man told about trying to get into position to shoot the different phases of the course. The man, who was 6'4" tall, gave up after his second run. In asking to be excused, he explained that there was too much of him and too little of the cockpit.

A favorite form of diversion among the pilots was trap shooting from a hand trap. Someone had thoughtfully included a hand trap, several cases of clay pigeons, three cases of ammunition and four shot guns. The sea gulls, however, didn't enjoy it and soon learned to respect that part of the field.

The officers and ladies of Fort Crockett were most thoughtful and kind, inviting the pilots to a club function. Major and Mrs. Fields gave them a delightful dinner. Their hospitality made the stay of the 8th Squadron a very pleasant one.

All in all, it was a very good campaign.

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MONTHLY CONFERENCE AT SAN ANTONIO DEPOT

The monthly Control Area Supply and Engineering Conference and Luncheon at the San Antonio Air Depot was held on May 5th and was attended by 14 officers of various Air Corps stations in that area and the officers of the Depot. Lieuts. (JG) R.D. Hogle and C.C. Howerton, USN, of the Naval Air Stations at Norfolk, Va., and Pensacola, Fla., respectively, then visiting the Depot on an extended air tour, also attended.

Major C.T. McAleer, Signal Corps, in charge of the Signal Corps Radio Section (aircraft radio) at the San Antonio Depot, gave a talk at the conference on "The Analysis of Sound Reproduction in Voice Transmission," with special reference to radio, illustrating with charts and giving demonstrations with an Army radio receiving set, a cathode-ray oscilloscope, and various types of microphones.

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PROGRESS OF CONSTRUCTION AT BOLLING FIELD

With perfect weather conditions prevailing, and aided by the fact that rainfall during the month of April was below normal the WPA project at the New Bolling Field, under the able direction of Mr. George G. Davies, Superintendent of Construction, hi a new high during that month in the amount of actual work accomplished. At the present time, the project is 33% complete, with 10% of the total work completed during April. Other figures for the past month are as follows: Total cubic yards of dirt moved, 70,000; pipe lines for storm drainage laid, 6,600 feet. To date, 187,000 cubic yards of dirt were moved and 23,000 feet of pipe lines laid. Concrete aprons are approximately 90% completed, and roads are 78% completed. The relief payroll for April was $37,000. A 175,000-gallon reservoir for fire control is being rapidly completed.

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NEW BOMBERS FOR PANAMA

Recently from out of the setting sun came nine new Martin B-10B Bombers, and it was a thrilling and inspiring sight,- their landing at France Field, marking the completion of one of the longest ferry flights in the history of the Air Corps. The flight from Langley Field to the Canal Zone was made via Brownsville, Texas; Mexico, and the Central American countries, and proved very successful, favorable flying weather being encountered almost all the way, and there was no serious motor trouble to cause any delays. The flight was slowed up slightly, however, because of the lack of rapid refueling facilities enroute from Brownsville. Many people from the Army, Navy and the Canal Zone were gathered at France Field to welcome the new equipment to Panama. Such a sight of modern Air Corps equipment has not been witnessed there for many years.

The flight of new planes was led by Col. Oldfield and his pilots from Langley Field. The visiting pilots were honored with a dinner and dance at France Field. They returned to their home station aboard the Army Transport "Chateau Thierry" after an apparently pleasant week's stay at France Field.

"These airplanes are very new," says the News Letter Correspondent, "having been flown direct from the Martin factory to Langley Field to be prepared for the trip to Panama. This type of aircraft has never been flown south of the United States, so it will be interesting to note how they will withstand the atmospheric conditions of the tropics, which are so different from those in the States."

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FORD TRANSPORT FLOWN TO COLOMBIA

One of the four tri-motored Ford Transports belonging to the Colombian Army recently arrived at Bolling Field, D.C., being piloted by Col. Benjamin Mendez, of the Colombian Air Corps. Col. Mendez, who was given flight training at the Primary Flying School at Brooks Field by Major Jack C. Hodgson, Air Corps, now Post Operations Officer at Bolling Field, flew the big ship in for the purpose of meeting the Minister of Colombia, Senor Don Miguel Lopez, and Senora de Lopez, and flying them to their home in Bogota, Colombia, for the summer. The party departed the following day on the first leg of the long trip, which will take them through Guatemala, San Salvador, Panama, Mexico and Central America. No definite schedule was arranged for the trip.

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STEAM GENERATOR FOR ENGINE STARTING

Results of tests at Wright Field, Dayton, O., of a model of a portable steam generator and steam-driven external energizer for engine starting have proved quite satisfactory, and the method seems entirely feasible. Procurement has been instituted for additional units for further test during the coming winter.

The weight of the steam generator will be in the neighborhood of 65 pounds. It will be of the "flash" type, capable of generating steam to the pressure required for starting (from a "cold" start) in less than one minute. Thereafter steam can be generated instantly as required for each start.

The water capacity is sufficient for approximately 20 starts without refilling. Automatic control of the gasoline furnace used as a source of heat is provided. The pressure required for operation of the energizer is approximately 80 pounds.

Two types of energizers are under test, one a 4-cylinder reciprocating type and the other a rotary vane type. The weight of the energizer will not exceed 28 pounds.

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ENGINEERING STUDENTS ON INSPECTION TRIP

Ten officers, students at the Air Corps Engineering School at Wright Field, Dayton, Ohio, left at eight o'clock on Monday morning, May 18th, for their annual factory inspection trip. The purpose of this inspection visit is to acquaint the officers of the School with the latest methods of production, and inspection of airplanes, aircraft engines and aircraft accessories.

According to the itinerary mapped out, the engineering students were to proceed first to the plant of the Curtiss Company at Buffalo, N.Y.; then to the Bausch & Lomb Company and the Eastman Kodak Company at Rochester, N.Y.; to the Wright Aeronautical Corporation at Paterson, N.J.; to the plant of the Glenn L. Martin Company, Baltimore, Md.; to Langley Field, Va., to attend the Annual Conference of the National Advisory Committee for Aeronautics; then to Bolling Field, Washington, D.C., returning to Wright Field on May 23rd.

Major F.M. Hopkins, Jr., Assistant Commandant of the Engineering School, accompanied the student officers on this flight and was in full charge.

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The 18th Composite Wing bugle band, now undergoing intensive training at Luke Field, T.H., under the direction of 2nd Lieut. Clarence W. Gilkes, 23rd Bombardment Squadron, is developing into a first class musical outfit.

NEW TRAINING AIRPLANES DELIVERED AT WRIGHT FIELD

THE year at Wright Field, Dayton, Ohio, has been marked by unusual activity in the development and procurement of training airplanes. Three new models, two of the basic type and one of the primary type, have been delivered and are undergoing acceptance tests. Quantity procurement on all three models is in effect.

Thirty BT-8's (basic trainers) are on order from the Seversky Company. This is a two-place, low-wing, all-metal monoplane, incorporating split flaps and fixed type landing gear. Of these, five have been delivered, two to the Materiel Division, Wright Field, and three to the Training Center at Randolph Field, Texas.

The first of 82 BT-9's (basic trainers) ordered from the North American Aircraft Company was delivered at Wright Field on May 4th. This is a two-place, low-wing monoplane with metal wing, steel tube fuselage, fabric-covered split type flaps, and fixed landing gear. Approximately half of this order is destined for the training of Air Corps Flying Cadets, the other half for Organized Reserve officers.

The first of 26 Primary training airplanes on order with the Stearman Company was delivered at Wright Field on April 25th. This Primary training model is a two-place biplane with steel tube fuselage, fabric-covered, hydraulic brakes, and fixed type landing gear.

Both basic trainers are equipped for instrument landing. The greater number of airplanes in these orders will eventually go to the Air Corps Training Center at Randolph Field.

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IMPROVEMENTS AT POPE FIELD

Improvements continue at Pope Field, Fort Bragg, N.C. Last spring was a busy one in this respect, but it is being eclipsed this year. Most of the old unsightly wooden buildings around the hangars have been removed, and these areas are being landscaped to the best of the abilities of regular enlisted personnel and officers. Approximately one thousand shrubs have been set out, 3,600 cuttings were set in a small nursery plot, and the areas immediately adjacent to the hangars were heavily seeded with bermuda grass. In addition, approximately fifty acres on the two flying fields are being disced, leveled, seeded with bermuda grass, and rolled. Also, the 84 pecan trees and 50 peach trees planted last year are being cultivated, fertilized, and maintained in the best of condition.

Both the officers and noncommissioned officers are taking great interest in gardens and grounds around their quarters. Many excellent gardeners are developing among them, and it has become commonplace for the Air Corps at Fort Bragg to receive compliments from the other branches and from civilians on the appearance of the Air Corps area.

All of the above has been accomplished, in addition to the regular aerial and ground training; cooperative work with the Field Artillery; servicing of approximately 210 transient airplanes per month; sending two airplanes to Fort Oglethorpe, Ga., for one week in March for tactical exercises; furnishing one airplane to Fort Barrancas, Fla., for two weeks in May; one month's field duty for Flight "C," 16th Observation Squadron at Fort Benning, Ga.; and passing creditable tactical and technical inspections with the Field Artillery. Furthermore, the above accomplishments have been achieved entirely by the personnel of the Air Corps without the aid of civilian labor, the Quartermaster Corps, prisoners, or the Civilian Conservation Corps.

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CRISSY FIELD PERSONNEL IN PHOTO MISSIONS

Crissy Field, Presidio of San Francisco, Calif., was recently assigned two interesting photographic missions which will keep its Photographic Section occupied until the early part of the summer. Both are in the Puget Sound area in the State of Washington, and operations will be base at Fort Lewis, Wash.

One of these missions is cooperative with the 29th Engineers - a large mapping project in the northwest, covering ten 15-minute quadrangles and tying together several projects which have been completed in the past. This work will be done with a 5-lens T-3A camera, flown in the standard C-8 Photographic airplane at an altitude of 20,000 feet. It is contemplated that this will require approximately ten photographic days which, with the weather usually encountered in that area, may extend over a month or more. The laboratory work should entail about two months.

The other project embraces the laying of a tactical map, 1:30,000, over an area adjacent to Fort Lewis, to an extent of 36,000 square miles. This will be taken with the same equipment, but flown at an altitude of 15,000 feet.

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The 20th Bomb. Sqdn., Langley Field, Va., is making preparations for the training during two weeks in July of Reserve officers to be assigned to this organization.

ACTIVITIES OF THE MIDDLETOWN AIR DEPOT

For a little statistical data on the activities of the Middletown, Pa., Air Depot, the News Letter Correspondent says, in substance, "Let's look at the record." He goes on to say that during the month of April, with the help of three enlisted pilots, Private, AM 1st Cl. E.R. Camp, Privates AM 2d Cl. E.A. Joyce and V.V. Poupitch, with one each C-27 Bellanca airplane and B-6A Bomber, the Depot with its entourage of officers, civilians, enlisted personnel and what not, has succeeded in hauling a total of 85,503 lbs. of freight over a total distance of 11,260 air miles. Of this total weight, 52,770 lbs. of freight were delivered to Air Corps fields in this district and 32,733 lbs. were returned from these fields.

To quote a few more figures, he says, the Engineering Department came thru with a total of 14 major overhauls, which included two Bombers, eleven Observation and one Pursuit airplanes. Minor repairs were accomplished on 15 airplanes. The Engine Repair Section of this Department made, in addition to numerous minor repairs, a total of 40 major overhauls. The Radio Repair Section says they have two men and enough work for six, so to be sociable they compromised and did the work of four.

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M.A.D. EMERGES FROM HAVOC WROUGHT BY FLOOD WATERS

The Operations Department of the Middletown, Pa., Air Depot recently moved into what was formerly the Disassembly Hangar. After laying linoleum, painting, varnishing and polishing, they stood back to admire their work, when, lo and behold! a flood walked in the door! So the laying of linoleum, painting, varnishing and what not has progressed beyond fond expectations. However, evidence of the damage caused by the recent flood is rapidly disappearing, due to the efforts of a special group of men hired for the purpose. As everybody knows, when a flood goes a visiting, it has no favorites, so the new machinery recently installed in the future Air Corps Shop became a victim, and, says the News Letter Correspondent, "we hereby go on record as stating that this machinery, together with the various equipment, have been dismantled, cleaned, oiled and put back in its original condition, and more equipment is arriving at frequent intervals to be installed as rapidly as possible. The old Operations Hangar is being converted into a temporary Dope Shop, and it is hoped that in the near future the Engineering Section can move into their fine new building. The Dismantling Section is already in operation in its new location, as well as the Test Flight Section. When the entire Engineering Unit gets oriented in their new quarters, watch the production."

The sport of fishing, boating and bathing on the flying field has drawn to a close, and the work of removing houses, horses, cows, stumps, etc., has also ceased. The airplanes, graders and tractors have full control of the field once again. The night lighting equipment went hay wire, but it is back in normal operation again, and it seems that all that remains of the recent flood is the memory plus a few sore muscles.

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MARCH FIELD TAKES ISSUE WITH MITCHEL FIELD

Referring to an item which appeared in the issue of the News Letter of May 1st, to the effect that Air Corps officers comprising the navigation class in the 9th Bombardment Group, Mitchel Field, N.Y., contemplated making a graduation flight to Miami, Fla., involving an over-water "hop" of 407 miles, the March Field Correspondent says:

"Little publicity has been given to the over-the-water accomplishments of the 19th Bombardment Group, stationed since October, 1935, at March Field. But its work easily outshines that mentioned in the article referred to.

"Just as an everyday mission, several officers of the 19th, with the Group Commander, Lieut.-Col. Howard C. Davidson, in charge, boarded the giant Douglas amphibian based at that station for a round-about flight southward over the Pacific Ocean, involving a total of over 800 land miles over water and a total flight of over 950 land miles. The mission took off from March Field at nine ten the morning of May 12th and landed at four fifteen.

"Another accomplishment mentioned by the Mitchel Field Correspondent was the reported first time any Air Corps officer group ever studied at a planetarium. Let it be known that classes at the Griffith Park planetarium in Los Angeles began for the 19th Bombardment Group officers over three months ago, in February, 1936."

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MODEL OF KELLY FIELD AT TEXAS CENTENNIAL

A model of Kelly Field, approximately 5 ft. by 4 ft., including buildings, water tower, hangars, roads, runways and airplanes, will be on display at the Texas Centennial Exposition in Dallas. This model was constructed by students of St. Henry's Academy in San Antonio from photographs furnished by the 22nd Photo Section of Kelly Field. From the interest displayed in a photographic reproduction of this model in one of the local newspapers, it is expected that this model of Kelly Field will be one of the interesting exhibits at the Exposition.

GUNNERY FOR BROOKS FIELD PERSONNEL

The 12th Observation Squadron, Brooks Field, Texas, recently moved to the National Guard Camp at Palacios, Texas, to conduct aerial gunnery exercises, and was to be followed by the 22nd Observation Squadron. This is the first gunnery exercise for the 12th Observation Group since April, 1933, and the first firing with the O-43 type airplane.

Captain John C. Kennedy is acting commander of the 12th Squadron, and Major B.F. Griffin is in command of the 22nd.

A Transport plane was loaned to Brooks Field for the duration of this camp for a daily trip to keep the camp supplied with perishable goods and necessary supplies. Due to the soft condition of the field following every rain, operations were delayed considerably. Communications are by radio, conducted on hourly schedules.

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ASST. SECRETARY OF WAR FLIES TO AKRON

On Saturday, May 16th, the Assistant Secretary of War, Hon. Harry H. Woodring, accompanied by members of his staff and Captains W.L. Ritchie and H.R. Baxter, Air Corps, departed from Bolling Field in a Douglas C-34 Transport for Akron, Ohio, where Mr. Woodring delivered an address on National Defense before members of the Reserve Officers' Association. The return trip to Bolling Field was made on the following day.

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BOLLING FIELD HUMS WITH ACTIVITY

Flying operations from Bolling Field, D.C., were unusually heavy during the past month, with every available plane assigned as frequently as possible. With the advent of favorable night flying weather, the two nights designated each week for night missions find a high percentage of Bolling Field planes on the line. With the exception of two semi-tropical thunder storms, flying conditions were excellent during the entire month.

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QUICK WORK SAVES BOSTON AIRPORT PLANE

Boston Airport was for a time deprived of one of its service type airplanes. The plane had just been ferried from the Middletown Air Depot, after overhaul, by Captain Richards and had not been flown out of the Boston Airport, when one Reserve officer taxied out from the line preparatory to taking a night flight. As he faced the control tower with the landing lights on waiting for the signal to take off, the lower left wing burst into flames. He immediately cut the throttle and switch and the passenger, Private Lacoco, jumped from the rear cockpit with a fire extinguisher. At the same instant, the members of the emergency crew were there with the fire truck and were playing streams of foamite on the wing. With a rapidity almost astounding, the fire was extinguished, but with the loss of the lower wing. A new wing has been installed and the plane is again available for use.

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ELIMINATING THE MOSQUITO PEST

Langley Field, Va., the home of the GHQ Air Force Headquarters, in the land of big mosquitoes, is rapidly becoming devoid of these pests through the efforts of Major Brooke, Flight Surgeon, and Captain Wolfinbarger of the 37th Attack Squadron. The immediate vicinity of the field is being sprayed with a mixture of three parts used oil and one part kerosene. Observation of stagnant water in old bomb craters and other low places show a well spread oil film which is fast eliminating the insect clouds formerly a common sight on the peninsula. As there are droplets of oil on most of the ground in low areas, it is expected that fresh pools will immediately be covered by the oil film.

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RAPID PROGRESS ON LUKE FIELD LANDING MAT

Work on the landing mat at Luke Field is progressing rapidly and, according to the latest reports, the mat will be completed and ready for use prior to the first of September, 1936. The mat is 3,000 feet by 400 feet, enabling a flight of three ships to take off with ease. The field was first surveyed and marked out, then the work of grading and filling in holes began. After this was completed, a six-inch base of crushed rock was spread and rolled. The final work to be done, which is oiling and spreading a fine layer of stone, will take around three or four weeks to complete.

The mat has long been needed at Luke Field, as landings and take-offs from the lava-formed island has caused many a pilot a few gray hairs, due to the ever present possibility of a ground loop caused by the landing gear giving way from hitting the rough terrain.

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The Fourth Observation Squadron, Luke Field, T.H., has finally lost the old reliable O-19's and, with the assignment of three B-12's to the Squadron, all personnel are busily engaged in reading new Technical Orders in order to acquaint themselves with the new equipment. The opportunity to work with new airplanes has promoted intense activity and interest in the work of every individual in the Squadron.

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Lt.-Col. Wm. C. McChord and Major Clinton W. Howard were promoted to Colonel and Lieut Colonel, respectively, effective May 1, 1936.

QUESTIONS AND ANSWERS

Q. What specific missions are visualized for the employment of Bombardment Aviation in a major war?

A. In a major war the enemy will attack us with aviation. The destruction of the base facilities of enemy aviation will, therefore, be a primary mission of our own Bombardment airplanes. For us to have a major war on this continent would mean that our enemy was bringing troops overseas to launch against us. The attack of enemy troop transports prior to and during landing operations will be a primary mission of Bombardment.

The maintenance of an overseas line of communications will be an essential requirement for the waging of a land campaign against us on this continent. The destruction of the naval strength of the enemy available for this purpose will, therefore, be a mission for Bombardment airplanes during such times as the enemy's naval vessels are within economical range of the air bases from which our Bombardment is operating for the accomplishment of the first two missions stated above.

After the enemy's forces are ashore, the destruction of their lines of supply will be a primary mission of Bombardment. The sinking of transports and tankers within economical range, which are carrying supplies for the enemy, the blowing up of docks, warehouses and tanks containing such supplies, and the destruction of important railroad and highway bridges will constitute material contributions to the accomplishment of this mission.

Because of the tremendous psychological effect of such operations, the attack of enemy airplane, ammunition and chemical factories will be a mission of Bombardment. If the conditions are favorable and the airplanes are available, the attack of other munitions factories may be undertaken.

All the above missions, while offensive in nature, would be undertaken for the purpose of enabling the defense of our territory to be successful.

Q. Are extremely long range Bombardment airplanes of great weight-carrying power needed to perform the missions intended for this class of airplanes?

B. By analyzing the missions selected above for Bombardment, it will be found that many of the targets proposed for this class of aviation are reasonably certain to be found within one thousand miles of bases available for the operation of Bombardment airplanes. An enemy force brought overseas for the purpose of invading our territory would either attempt a landing on our own coast or fairly close to our land frontiers. On the other hand, enemy air bases and munitions factories may be at considerable distances from our air bases.

It is probable, then, that we shall be able to reach many objectives with Bombardment planes having from one thousand to two thousand miles range, but that for other objectives a range up to five or six thousand miles may be desirable.

As to weight-carrying ability, so long as a Bombardment airplane can carry a bomb of a size capable of destroying the physical target against which the attack is directed, it is capable of performing the mission. It is believed the carrying of a 2,000-pound bomb will fulfill this requirement. It is probable that considerations of vulnerability of the airplane may dictate the greatest possible use of relatively small Bombing planes, just large enough to carry the bomb and gas load required. But to widen the field of employment and secure the greatest effectiveness for this class, there will also be required a number of very long-range Bombers of great weight-carrying capacity. On long-range missions the time consumed, the flying hazards to be overcome, the navigational difficulties to be solved and the attack menaces to be surmounted will make it desirable to carry as large a bomb load as possible. It would appear from the foregoing considerations that a well balanced Bombardment force would comprise a preponderant percentage of Bombers having from one thousand to two thousand miles range, carrying a 2,000-pound bomb; that a smaller percentage would be larger Bombers, ranging in capacity to the very heaviest type which can be successfully designed, built and flown.

Q. What is meant by "economical range" when speaking of combat missions for Bombardment?

A. This term as usually employed, that is in connection with the assignment of Bombardment combat missions, means to select from among a group of targets, approximately equally remunerative, those targets lying closest to the operating base of the Bombardment concerned. It means, further, to seek to discover remunerative targets for bombardment within relatively short ranges rather than to select the targets which are readily presented at considerably greater ranges.

The above course of action is predicated upon the fact that the longer the range involved in the execution of a Bombardment mission, the greater are the following five factors:

a. Time consumed in executing the mission.

b. Amount of exposure to hostile attack.

c. Amount of exposure to mechanical failure.

d. Expenditure of fuel and life of the aircraft.

e. Expenditure of energy of the personnel.

From a still broader viewpoint, the shorter ranges are more economical in that to accomplish missions at short ranges requires a much smaller, and consequently much less expensive, Bombardment airplane to carry a single bomb of the maximum size, than would be required to carry the same bomb over a considerably greater distance. This is due to the fact that in any high speed Bombardment airplane, the weight of the gasoline and oil consumed per 500 miles - for example - bears a relatively high ratio to the weight of a 2,000-lb. bomb, which at present is the maximum weight considered necessary for the material destruction of the targets against which it is contemplated to launch Bombardment aircraft.

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AWARDS PRESENTED TO CAPTAIN STEVENS AND LIEUT. HARMAN

SPRING showers halted long enough at Wright Field, Dayton, O., on May 12th to permit the ceremony prepared for the presentation of the Oak Leaf Cluster to the Distinguished Flying Cross to Captain Albert W. Stevens, and the Soldier's Medal to Lieut. L.F. Harman, to take place out-of-doors as planned. The lawn southwest of the Administration Building was the scene of the occasion, and looked its best enlivened by the interest of many spectatord who had come to look on and offer congratulations.

Captain Stevens received his award for the successful consummation of the Stratosphere Flight which, besides adding valuable data in the field of science, achieved the world's altitude record. Lieut. Harman was awarded the Soldier's Medal for valiant rescue work performed at the risk of his life upon the occasion of the crash of the Boeing Bomber last October, in which Major P.P. Hill and Mr. Leslie Tower, Boeing pilot, lost their lives.

Major-General William E. Cole, Commanding General of the Fifth Corps Area, and Staff, came from Columbus, Ohio, to make the presentations, and Captain A.W.Brock, Adjutant, read the citations.

Captain Stevens was further honored that night by the presentation of a very beautiful bronze plaque at a dinner given by the aeronautical committee of the Dayton Chamber of Commerce. A duplicate of the plaque was presented to Captain Orvil A. Anderson, and accepted for him by Brigadier-General A.W. Robins, Chief of the Materiel Division, since Captain Anderson could not be present. Captain Anderson was pilot of the big balloon on the trip into the stratosphere.

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SPEED - PLUS

By the Langley Field Correspondent

Communication between ground and air units is daily becoming more and more important to the Air Corps. Too often, ignorance of the communications facilities at hand holds up certain phases of our daily work, resulting in useless delay, rasped nerves, irritated superiors and a sense of inadequacy among "those who carry out the orders." SPEED is an essential factor these days. Consider that every day faster planes are being built. Consider that communications - ground, air and ground, air and air - are being perfected and speeded up, allowing much faster coordination. The days of the Pony Express are gone these many years - may they rest in peace - but in many instances personnel are still working under the mental handicap of "those good old days."

Today the human factor needs a more thorough tuning and speeding up than much of the complicated machinery of this age. Headwork - a step beyond just plain common sense - good headwork, will provide a means to the end. For instance:

A few days ago, Post Headquarters, Langley Field, Va., required certain information relative to the immediate transfer of an enlisted pilot of the Station Complement to another station. It was essential that the information be secured as soon as possible to be incorporated in orders then being compiled. Pvt. Joe E. Barton, the individual in question, was at that particular moment piloting a B-10 on a bombing mission at an altitude of some 7,000 feet and an indeterminate number of miles away from Langley Field, and was not expected to return to the airdrome until quite some time later. A hurried telephone call from the organization first sergeant to the Operations Officer, who immediately contacted Private Barton by radio and secured the required information, enabled Post Headquarters to proceed with the compilation of orders.

From the time that Post Headquarters telephoned the organization first sergeant until the moment that Post Headquarters had the desired information, less than five minutes had elapsed! Radio and telephone, the modern miracle workers, had made this possible. But - and there is a moral somewhere in this - the human equation was no less to be complimented than the mechanical factors concerned in this accomplishment. It was split-second

(Continued on page 11).

NEW AIRPLANES FOR MARCH FIELD

Six new and swift airplanes will be added to the complement of the 19th Bombardment Group at March Field, Calif., in August, according to a recent announcement of Brigadier-General Henry B. Clagett, commanding the First Wing of the General Headquarters Air Force.

First of the planes scheduled for delivery during the "dog days" will be five Martin B-10B Bombers. These will reinforce the 19th Bombardment Group to a strength of 14 Martins. With the exception of minor improvements, the new planes are much the same as the present nine in service at March Field.

The other plane expected in August is one of the DC-34 Douglas Transports ordered by the Army. It will be slightly larger than the flagship of the GHQ Air Force, based at Langley Field, Va., and now in California on official business. Designed principally to haul freight, it will have a track running down its center to facilitate handling material. Seats may be placed in it, however, to carry airplane crews and administrative personnel to distant points.

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91ST OBSERVATION SQUADRON IN MANEUVERS

The 91st Observation Squadron, with the 15th Photo Section attached, stationed at Crissy Field, Calif., recently completed field maneuvers with the Sixth Brigade. For seventeen days, April 12th to 29th, inclusive, the organization lived in their camp at the Watsonville Airport, about 100 miles south of San Francisco, and a few minutes' flight from the Infantry, Cavalry and Artillery camps.

Daily missions of various types were carried out - Liaison, reconnaissance (day and night), aerial photography, com communications (visual and radio), formation, and aerial gunnery.

A dual purpose was accomplished in the maneuvers - the field exercises and the quarterly test of airplanes with full military equipment.

Credit must be given the Squadron Supply Sergeant for saving many shins and much discomfort by the ingenious idea of painting the tent pegs white.

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BACHELORS THINNING OUT AT CRISSY FIELD

Cupid has been doing a land office business at Crissy Field, Calif. Since the first of the year there were no less than six weddings in a command of 150 men. The newlyweds are 1st Lieut. Austin A. Straubel, Air Corps; 2nd Lts. Homer B. Bernard, John B. Preston and David R. Nelson, Air Reserve; Staff Sgt. H.E. Etheridge and Pvt. John B. Steele, Air Corps.

FIRST PURSUIT GROUP IN THE FIELD

The First Pursuit Group, Selfridge Field, Mich., is at this writing based in the area Midland - Bay City - Saginaw and Camp Skeel, Oscoda, Mich., for a two-weeks' period of Group maneuvers. The 56th Service Squadron, with 4 officers and 100 enlisted men, departed by motor convoy at 6:00 a.m., May 19th, for Camp Skeel, to establish a gunnery camp. The 57th Service Squadron, with 7 officers and 150 enlisted men, was scheduled to depart at 6:00 a.m., May 21st, by motor convoy, to establish camps at Midland, Saginaw and Bay City, Mich. Headquarters Flight, and the 17th, 27th and 94th Pursuit Squadrons, with 52 airplanes, 77 officers and 177 enlisted men, were to depart for the training area on May 22nd. Group Headquarters was to be established at Bay City. The Group plans to return to the home station on June 6th.

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LIEUT. PARKS DIES IN AIRPLANE CRASH

Second Lieut. James T. Parks, Air Reserve, was killed instantly when the Pursuit airplane which he was piloting from Selfridge Field, Mich., crashed from an altitude of about 100 feet near Peck, Mich., on May 10th. Lieut. Parks was on inactive status and had been assigned to Selfridge Field for inactive flying training since 1932. He was a ballistics expert of the Detroit Police Department. At the time of the accident he was apparently trying to find a place to land, but when at about 150 feet altitude the plane nosed over and crashed. He is survived by his wife, Marguerite, and daughter, Marjorie.

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SPEED - PLUS

(Continued from Page 10).

thinking - and no mechanical gadget has yet been devised to compare with the complicated, yet simple, mechanism of the human mind - and taut nerves relaxed, superiors smiled and nodded approval, and a glow of honest accomplishment suffused the beings of "those who carry out the orders."

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NARROW ESCAPE FOR LIEUT. CHENNAULT

Recently, while engaged in aerial gunnery practice at Barksdale Field, La., the .50 calibre gun in the plane piloted by 2nd Lieut. John S. Chennault, of Selfridge Field, exploded, apparently due to a weak barrel locking spring. Blinded by fumes, Lieut. Chennault almost flew into a wooded area, but he recovered and made a safe landing in the field. Parts of the gun fell in the cockpit, and a portion of the fuselage was torn from the airplane.

Hamilton Field Section

THE SEVENTH BOMBARDMENT GROUP

The 7th Bombardment Group, now stationed at Hamilton Field, San Rafael, Calif., was organized as a complete unit at March Field, Calif., in October of 1931. The Group remained at March Field until December, 1934, when it was transferred to the newly completed Hamilton Field, under the command of Lieut.-Colonel C.L. Tinker.

The period of sixteen months which has elapsed since the arrival of the Group at Hamilton Field has been one of experimentation in Group and Squadron organization, also one of hard work, but probably the most beneficial in the 7th Group's history.

In January, 1935, two B-12 airplanes, piloted by Capt. A.G. Hamilton and Lt. B. Walsh, Air Corps, were ordered to Dayton, thence to join the Cold Weather Test Flight under the command of Lieut.-Colonel Ralph Royce. Capt. Hamilton received commendation for his excellent work in connection with this flight.

In April, 1935, bomb sights and machine gun mounts for the B-10 airplanes arrived, and training in gunnery and bombing was conducted for the first time at Hamilton Field.

The only available place in the vicinity of Hamilton Field for a gunnery range is along the coast line. Due to the prevalence of coastal fogs, this area can be used only a small percentage of the flying days. Despite this condition and the fact that the Group or separate squadrons have conducted or participated in numerous maneuvers and field exercises, squadrons have taken every available opportunity to complete firing requirements, and all squadrons will complete their TR 440-40 gunnery training before the end of this training year.

Training in aerial bombing has progressed quite rapidly and has been relatively satisfactory. All members of the 7th Bombardment Group have completed bombing under the requirements of TR 440-40 and qualified as expert bombardiers. They are now conducting bombing as required by the new "tentative" TR 440-40. It is anticipated that, due to the more rigid requirements of the new regulations, the number of bombardiers qualifying will be materially reduced.

In addition to the regular training required in aerial bombing, this Group has conducted considerable bombing at altitudes from 15,000 to 20,000 feet, and one mission at 23,000 feet. The results of this high altitude bombing, while not unsatisfactory, are not as good as can be expected when more training has been accomplished and all instruments and bomb sights properly calibrated. It is believed that the greatest errors in high altitude bombing occur due to the pilot's inability, when near the service ceiling of the airplane, to fly the airplane as accurately as is required. Accuracy is improving as pilots gain more experience in this work. Bombing at high altitudes is made more difficult by the use of oxygen and the freezing of instruments. It has caused each pilot and bombardier to realize that accurate aerial bombing has as its first prerequisite carefully and accurately calibrated flight instruments and a pilot who can fly the airplane accurately with instruments alone.

When the GHQ Air Force was formed, a complete reorganization was effected to comply with the test tables of organization. At this time the 69th Service Squadron was organized and attached to the 7th Bombardment Group.

In August, 1935, special training was started by the 11th Bombardment Squadron for a demonstration of formation and bombing to be held at Fort Leavenworth, Kansas, in October. Three B-12 airplanes, under the command of Captain John G. Moore, were sent to Fort Leavenworth to participate in the demonstration.

This Group participated in numerous maneuvers and concentrations during the past year. Group and First Wing concentrations have been held in the Los Angeles area, San Diego, March Field, San Joaquin Valley, Mojave Desert, Salt Lake and Denver areas, and at Hamilton Field. During these concentrations, all pilots have become familiar with the majority of landing fields in the western part of the United States, servicing facilities at these fields and the problem of maintaining airplanes and equipment under varying and different conditions.

Each tactical Squadron of the Group has had one field exercise of at least a week's duration, operating independently. The 11th Squadron operated from Coalinga, Calif., during the latter part of June, in weather so hot that all maintenance had to be completed prior to 7:00 a.m., as after that hour the metal of the tools, engines and airplanes became so hot as to burn the mechanics' hands.

The 31st Squadron operated from Medford, Oregon, without undue difficulties. The people of Medford made their stay a pleasant one through their cooperation in procuring badminton courts, skeet ranges and other recreational facilities for the use of the personnel of the Squadron.

The 9th Squadron spent their week of exercises at Visalia, Calif., and encountered much the same difficulties as those of the 11th Squadron at Coalinga.

The 88th Observation Squadron was transferred from Brooks Field, Texas, to Hamilton Field and attached to the 7th Bombardment Group in October, 1935. It is essentially a long range Observation Squadron and has participated in 1st Wing Maneuvers and Concentrations since the organization of the GHQ Air Force. Since its arrival at Hamilton Field it has received better airplanes and has conducted extensive training in air navigation and other phases of long range observation.

The 7th Provisional Bombardment Group, consisting of available airplanes and personnel of the 7th and 19th Bombardment Groups, participated in the GHQ Maneuvers in Florida in December. The outstanding accomplishment of this maneuver was the rapidity with which the airplanes concentrated at great distances with the necessary equipment for immediate operation. This was especially shown when the 7th Bombardment Group flew from March Field, Calif., to Vero Beach, Fla., a distance of 2300 miles, in an elapsed time of 21:15 hours.

As rapidly as pilots are qualified in instrument flying in the BT type airplane, advanced training in aerial navigation by instruments is being accomplished. During these navigation problems, the front part of the pilot's cockpit enclosure is covered with tape or paint. Excellent results and valuable training in both aerial navigation and instrument flying are being obtained.

A number of the B-12 airplanes from this station are being shipped to the Hawaiian Department, and have been replaced with B-10B airplanes. The tactical squadrons are now occupied in calibrating instruments, installing oxygen equipment, bomb sights and machine gun mounts in preparation for continuation of training in bombing and gunnery.

Due to the limited recreational facilities at this station, the problem of athletics and other means of relaxation is acute. The officers and cadets have partially solved the problem by challenge matches between organizations in skeet shooting, badminton and soft ball whenever possible. The enlisted personnel are developing great interest in badminton, and combat crew personnel are taking an active interest in skeet shooting. The need for a gymnasium and theatre is very urgent.

The Group organization, as it now exists, is composed of the following:

Commanding Officer, 7th Bombardment Group
Lieut.-Col. C.L. Tinker

Staff:
S-1 - Lieut. E.W. Suarez
S-2 - Major K.N. Walker
S-3 - Major K.N. Walker
S-4 - Captain E.T. Noyes

Armament:
Captain C.G. Williamson
Captain M. L. Harding

Communication:
Captain R.H. Lynn

9th Bombardment Squadron:
C.O. - Major J. M. Davies
8 Regular officers
5 Reserve officers
2 Flying Cadets

11th Bombardment Squadron:
C.O. - Major C.H. Ridenour
7 Regular officers
4 Reserve officers
2 Flying Cadets

31st Bombardment Squadron:
C.O. - Major H.D. Smith
6 Regular officers
5 Reserve officers
1 Flying Cadet

88th Observation Squadron:
C.O. - Major C.E. Giffin
5 Regular Officers
7 Reserve Officers

69th Service Squadron:
C.O. - Major J.W. Spry
6 Regular Officers

70th Service Squadron
C.O. - Major D.M. Myers
6 Regular Officers

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ORGANIZATION OF TECHNICAL DIVISION FOR MAINTENANCE OF 7TH BOMBARDMENT GROUP

1. This system of maintenance has been in operation since October 1, 1935, by the 7th Bombardment Group, Hamilton Field, and is organized to function as outlined below:

a. All maintenance personnel for airplanes and allied equipment are relieved from duty with combat squadrons, service squadrons, and Station Complement and placed on special duty with an organization known as the Technical Division.

b. The Technical Division operates under a Technical Executive and is organized with the following branches:
(1) Maintenance Engineering
(2) Base Engineering

(3) Armament
(4) Communication
(5) Supply

2. The responsibility and organization of the above mentioned branches are as indicated below:

a. The Maintenance Engineering Branch is responsible for 1st and 2nd Echelon maintenance of airplanes and auxiliary equipment, less maintenance of armament and communication equipment and servicing of airplanes with ammunition, bombs and pyrotechnics. It is organized into two sections, the Flight Section and the Preventive Inspection and Unit Change Section, as follows:

(1) The Flight Section is responsible for the servicing; daily and preflight inspections of all airplanes and engines, including adjustments and replacement of small parts. Enlisted personnel to be assigned to the flight section consists of the following:

(a) One line chief.
(b) Flight chief and assistant flight chiefs for each combat squadron.
(c) Crew chief and assistant crew chief for each airplane. (Note: Single engine airplanes should not need an assistant crew chief.)

(2) The Preventive Inspection and Unit Change Section is responsible for the 2nd Echelon maintenance of airplanes and engines, including preventive inspections and changes of major units and assemblies, less Technical Order Compliance Changes. Enlisted personnel of the Preventive Inspection and Unit Change Section is organized into crews, consisting of one noncommissioned officer and six (6) other enlisted men. (Note: The crew chief and assistant crew chief accompany the airplane whenever Preventive inspection or Unit Changes are made and assist crews detailed therefor). For field service, crews are augmented from the Base Engineering Branch at the rate of one welder, one sheet metal worker, one dope and fabric man, and one wood worker for each combat squadron.

b. The Base Engineering Branch is responsible for all Technical Order Compliance Changes, 3rd Echelon maintenance, maintenance of flying field, visiting airplanes and crash boats. It is organized and divided into five sections: The Aero Repair Section, the Shop Section, the Flying Field Maintenance Section, the Airway Section, a Rescue and Crash Boat Section, as follows:

(1) The Aero Repair Section is responsible for Technical Order Compliance Changes, which are not made at depots; maintenance and repair of airplanes and installation of units beyond the facilities of the Preventive Inspection and Unit Change Section; salvaging and reclamation of airplanes incapable of flight.

(2) The Shop Section is responsible for the repair of equipment and supplies at the base, manufacture of tools and supplies not procurable through supply channels and inspections, maintenance and repair of parachutes and flying clothing. This section also furnishes mechanics to augment Preventive Inspection and Unit Change crews for field service as outlined in paragraph 2a, above.

(3) The Airway Section is responsible for the servicing, inspection and maintenance and repair of all transient airplanes.

c. The Armament Branch is responsible for the installation, inspection, maintenance, and repair of Armament Equipment at the base and in the field, loading and fuzing of bombs and servicing of airplanes with ammunition, bombs and pyrotechnics. For effective operation, enlisted personnel of the Armament Branch should be organized into crews of sufficient strength to maintain and service the airplanes of the combat squadrons and instrument section, including bomb sights.

d. The Communication Branch is responsible for the installation, inspection, maintenance and repair of communication equipment, and the operation of ground equipment. This branch is organized into two sections: The Base Section and the Airplane and Field Section, as follows:

(1) The Base Section is responsible for the installation, inspection, maintenance, repair and operation of the Base Radio Station, the Base Alert Net, and the Group Communication System.

(2) The Airplane and Field Section is responsible for the installation, inspection, maintenance and repair of the airplane radio equipment and field radio sets, setting up and operating of ground stations in the field; and the installation, maintenance and operation of the field telephone service. For effective operation, enlisted personnel of the Communication Branch are organized into crews of sufficient strength to maintain and service the airplanes of one combat squadron.

Note: While the combat crews are under the direct command of the squadron commander, they are charged with the daily maintenance of armament and communication equipment installed in airplanes.)

e. The Inspection Section is responsible for all Technical Inspection as prescribed by Circular 120-2, OCAC.

f. The Supply Section is responsible for the procurement, storage, and issue of all classes of equipment and supplies required to maintain the flying units at the Base or in the field.

3. The 7th Bombardment Group has found this maintenance system to be very efficient. It has the following advantages:

a. Places the responsibility of all

maintenance under one head and section, instead of two or more as under the present organization.

b. Provides for flexibility in the strength of a command, in that the personnel requirements are based upon the number of airplanes to be serviced.

c. Simplifies the supply problem, saving time and duplication of paper work and efforts required in the requisitioning and obtaining of parts and supplies.

d. Allows for the organization of enlisted personnel into crews and shifts to maintain airplanes in commission during normal flying hours.

e. Provides for specialization of crews to perform preventive inspections and unit changes, which considerably reduces the maintenance man hours normally required to perform any particular inspection or unit change.

f. Allows for a more thorough supervision of inspections than is now provided under the provisions of Circular 120-2, OCAC.

g. Possible to provide sufficient labor saving devices necessary for thorough preventive inspections, economically impractical if more than one maintenance organization is operated at a station.

h. Allows a reduction in number of clerical personnel required to maintain technical records, files, and preparation of technical reports.

i. Allows tactical commanders to give their full time for planning and training of the combat personnel.

4. Much of the success of this system has been due to the untiring efforts of Major Devereux M. Myers, Group Maintenance Executive, and Major Delmar H. Dunton, Assistant Maintenance Executive.

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BOMBING ACTIVITIES OF THE 7TH BOMBARDMENT GROUP

DUE to the organization of the GHQ Air Force as an integral part of the military forces of the nation, with its entailed necessities of mobility, calling for rigid tests of its objective functions, the trend of Bombardment missions has resulted in changed ideas on normal methods of training.

If the ideal bombing unit is to be perfected, all of its personnel must continuously maintain their proficiency. The old maxim has it that practice makes perfect and, with this point in view, continuous year-round bombing and gunnery has been in progress in this Group, in addition to the flying and navigation training required by the new regulations. Bomb sights and ground trainers were received and installed. Instruction on the new sight was started in the shops and on the trainers, and maintenance and repair facilities for the sights were devised. The real work of bringing the entire Group up to a uniform standard of proficiency received its initial impetus. This brought a major problem to the fore. The Group had to hurdle the task of providing primary training for all of its personnel in the fundamentals of bombing involving the use of the new sight.

Due to various contingencies which had arisen - "CCC", "Air Mail," et al, an officer or enlisted man who had participated in bombing training within a few years prior to this time was the exception rather than the rule. None were familiar with the operation of the new bomb sight. Thus, before a definite program for continuous bombing practice could be begun, rudimentary instruction was in order.

Classes were conducted in the use of the sight, and all three bomb trainers were put into continuous operation in order that personnel of the three tactical Bombardment squadrons might have reasonably thorough ground instruction before being permitted to operate on actual bombing or camera obscura missions. Every pilot was given at least eight hours trainer time before starting camera obscura. When the technique of pilot directing had been mastered, the individual, upon completion of the prescribed initial training, was released for bombing practice.

The Group has a target just off the field in the shallows of San Pablo Bay, but the use of this target is frequently limited by fog and low ceilings, especially in the winter months. Therefore, in order to carry out our extensive training program and conduct many required service tests on complete sets of new type equipment, it has been necessary to use the Mather Field Bombing Range in addition to the Hamilton Field Range. A permanent camp is kept there for this purpose and one or the other of the Bombardment Squadrons are encamped at Mather Field for six months of the year.

The new Bombers and equipment were an unknown quantity insofar as actual bombing and gunnery were concerned. This meant that while initial instruction was being given, bomb racks and bomb sights must be tested individually and collectively, suitability of certain arrangements determined, and changes recommended, where necessary. So, while the training was in progress, certain personnel were concentrating on testing the bombing equipment, making necessary initial installations and changes, and in determining the best procedure which was later prescribed for actual bombing practice.

Extensive test bombing at all altitudes and speeds within the range of the planes was conducted by personnel of the three squadrons in the period from May to the first of October. During that time, bomb sight and personnel limitations were determined and ballistic data was tested so that everything was ready for the start of actual bombing under regulations for record and practice, in October, 1935. For this record and practice bombing in accordance with the regulations, the squadrons moved, individually, into camp at Mather Field, where there is a satisfactory bombing range. The local range was still being used for various tests prescribed by higher authority. This included tests in extreme low and high altitude bombing and in the design and test of a sight for use at altitudes below that at which the standard sight may be used. These tests, which are still being conducted, include bombing missions as low as two hundred feet and some at the actual service ceiling of the airplane. In one instance, a mission was carried out at an altitude so near the actual ceiling of the airplane that each time one of the five 300-pound bombs was released the plane would gain another 300 feet altitude, which could just barely be held.

Each squadron took its turn in camping at Mather Field while it completed all of its assigned and attached personnel in the required qualification bombing. While they were there for that purpose, they concentrated on bombing, and missions were conducted continuously from early in the morning until late in the afternoon of every day in camp. Under that program, one squadron dropped over 1100 bombs and completed practically all of its "TR. 440" bombing in less than ten days. The other two squadrons, handicapped by the comparatively bad winter weather, still have daily averages of bombs dropped of over 100 each. Practically all personnel of the Group have completed their qualification under the old regulations, and one squadron has again moved to Mather Field to start bombing under the new tentative T.R. 440-40 which is being tested.

A two-weeks' maneuver of the entire 1st Wing was held in the San Joaquin Valley and the Mojave Desert to test the maintenance system for extensive operations and for conducting long range bombing and gunnery missions jointly by all units of the Wing. During this maneuver, Bombardment and Attack squadrons of the Wing were first scattered throughout the area of the maneuver, each operating from a separate airdrome under conditions which might exist at the very start of an emergency. In the three days of this phase, joint missions, coordinated by Wing and Group Headquarters, were carried out in which the various units rendezvoused en route and proceeded on to bomb targets which had been prepared in the Mojave Desert; then returning to their respective airdromes without landing.

The next phase included the assembling of the units of each Group at Group airdromes and further work along the same lines as the earlier missions, while the last phase required the squadrons to move back to their original airdromes and operate with additional assistance from supply and maintenance units.

For this maneuver, ground gunnery targets were prepared as well as two types of bombing targets. There were the conventional circular bombing targets and one target made in the shape and dimensions of a battleship outline, including the danger area around the ship. On each mission, the units flew from their assigned bases to the desert, bombed, individually or by flight, squadron or group salvos as prescribed, and then to simulate actual war operations returned to their respective airdromes without landing en route. This required that some of the units travel as far as 250 miles one way, and that they remain in the air for the entire mission, including bombing, as long as 3½ to 4 hours. Of course, it is realized that this period in the air is not exceedingly great, but it is believed that it is the first time that combined wing problems have been conducted over such a great distance with actual bombing included.

Aside from the tests of certain tactical problems, this maneuver was designed to test the effectiveness of the units in bombing by various methods. On some of the missions, bombs were released by individual planes with each bombardier operating his bomb sight. Other missions required the simultaneous dropping of all bombs from formations of all of the Bombardment squadrons in the 1st Wing. This so called "pattern bombing" was itself tried in several ways, in each of which, however, bombs were released from non-sighting planes when the bombs were observed leaving the plane which was designated to perform the sighting operation for the particular unit. Sometimes each flight would have one plane which performed all of the sighting operations for the flight. There were also squadron salvos for which only one sight in the squadron was used, and others for which one bombardier performed all sighting operations while the leading planes of the other flights operated their sights for range only. Finally, the Groups and the Wing repeated these various methods for the larger units, to arrive at conclusions as to the best methods for attacking targets under various conditions.

Following a short visit home, the 7th Group again found itself bivouacked at Muroc in the Mojave Desert, participating with the 17th Attack Group, its neighbor from March Field, in advanced bombing tests based on the results of the November bombing on the same targets. In this exercise, especial stress was placed on formation and individual bombing, conducted with standard 300 and 100-pound practice bombs, together with improvised concrete bombs, weighing 600, 1100 and 2,000 pounds. At the conclusion of the maneuver, a Group mission, composed of two 9-plane squadrons, released squadron salvos of eighteen 300-pound live demolition bombs on the battleship target with excellent results.

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LIEUT.-COLONEL CLARENCE L. TINKER, AIR CORPS

Lieut.-Colonel Clarence L. Tinker, Commanding Officer of the 7th Bombardment Group, Hamilton Field, Calif., was born November 21, 1887, in Osage County, Oklahoma. He graduated in 1908 from the Wentworth Military Academy, and his first four years in the military service were spent as a third and second lieutenant of the Philippine Constabulary on the Island of Panay.

Appointed a second lieutenant of Infantry, April 24, 1912, he served with the 25th Infantry from June 7, 1912, to March 6, 1917; with the 18th Infantry, March 7 to June 1, 1917; with the 62nd Infantry, July 13, 1917, to June 8, 1918, and with the 35th Infantry, July 20, 1918, to March 13, 1919. He was promoted to 1st Lieutenant, July 1, 1916; to Captain, May 15, 1917; to Major, July 1, 1920, and to his present rank, August 1, 1935.

While on duty as Professor of Military Science and Tactics at the Riverside, Calif., Polytechnic High School and Junior College, he was detailed to the Air Service for flying training and, following the completion of the course at the Primary Flying School at March Field, Calif., on March 17, 1920, he was ordered to Post Field, Fort Sill, Okla., to pursue the course of instruction at the Air Service Observation School. Upon his graduation, he was rated "Airplane Pilot" as of October 14, 1921, and on November 25th of that year was transferred to the Air Service. He completed the course of instruction at the Field Artillery School of Fire, December 15, 1921, whereupon he received the additional rating of "Aerial Observer."

Assigned to station at Fort Riley, Kansas, Col. Tinker commanded the Air Service troops at that post from February 9, 1922, until the fall of 1924, when he was assigned as student at the Air Service Tactical School, Langley Field, Va. His completion of the course of instruction was followed by a year of duty as student at the Command and General Staff School at Fort Leavenworth, Kansas. Following his graduation from the latter school, he was detailed as Assistant Military Attache for Air to the American Embassy, London, Eng.

While on this duty, he was piloting a DH-4 over a marked course with Lieut.-Commander Robert A. Burg, U.S. Navy, as passenger. Shortly after leaving the Kenley Airdrome, the engine ceased to function and, unable to clear the farther crest of a valley over which he was flying, the plane crashed and immediately caught fire. Col. Tinker managed to free himself from the blazing plane and his first thought was to extricate his passenger, who was unable to free himself because of his injuries and because his parachute encumbered him. Making no headway on one side of the now blazing inferno, he tried the other side and was successful in freeing the badly injured Naval officer. Lieut.-Colonel Kenyon Joyce, the Military Attache, recommended Col. Tinker for the Distinguished Flying Cross.

After leaving the hospital in England, Col. Tinker returned to the United States and received further treatment for his injuries at the Walter Reed General Hospital. Upon restoration to duty, he was, for a period of eight months, on duty in the Office of the Chief of the Air Corps, Washington. In November, 1927, he was assigned to Kelly Field, Texas, as Assistant Commandant of the Advanced Flying School. He assumed command of the Advanced Flying School and of the 10th School Group from July 1, 1930, to August 6, 1930.

On October 15, 1930, Col. Tinker assumed command of Mather Field, Calif., and of the 20th Pursuit Group, and remained on this duty for exactly two years, when he was transferred to March Field, Calif., where, among other duties, he performed those of Executive Officer and Post Operations Officer. In June, 1933, he assumed command of the 17th Pursuit Group. Upon the occupancy of Hamilton Field, he was placed in command of this post and of the 7th Bombardment Group, in February, 1935.

Col. Tinker has passed the 4,000-hour mark in total flying time. On July 4, 1935, he flew across the continent in a Martin Bomber from Hamilton Field to Washington, D.C., in an elapsed time of 14 hours and 30 minutes, with stops at Salt Lake City, Omaha and Indianapolis. His return flight to Hamilton Field, on July 9th, was accomplished in 16 hours and 55 minutes, stops being made at Indianapolis, Scott Field, Denver and Salt Lake City.

During the GHQ Air Force Maneuvers in Florida in December, 1935, Col. Tinker led the 7th Provisional Bombardment Group in a flight from March Field, Calif., to Vero Beach, Fla., the distance of 2300 miles being accomplished in an elapsed time of 21 hours and 15 minutes.

On September 5, 1935, Col. Tinker, about to make a landing at March Field upon returning with 61 other airplanes of the 1st Wing, GHQ Air Force, from a mock air attack on the California Exposition Grounds at San Diego, noticed that his landing gear could not be lowered. Ordering his three passengers to jump, he contacted the ground by radio and was advised to go to Rockwell Field where expert mechanics were available. At Rockwell Field he glided in on the belly of the airplane, which suffered only slight damage.

For the heroism displayed by Col. Tinker in the rescue of Commander Burg, as previously mentioned, the War Department awarded him the Soldier's Medal.

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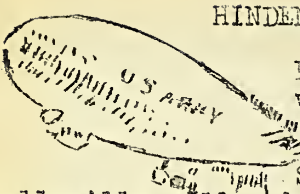
LIGHTER-THAN-AIR ACTIVITIES

HINDENBURG VERSUS TC-14.



During the past few weeks, many visitors at the huge airship hangar at Scott Field, Belleville, Ill., have asked the military personnel how the U.S. Army airship TC-14, the world's largest non-rigid airship, compares in size, speed and structure with the new Hindenburg , which recently completed its second trans-Atlantic flight.

Comparing the two airships is much like comparing a wiener with a bologna. The Hindenburg has a length of 812 feet, more than three and one-half times that of the TC-14. The German ship's gas capacity is 6,609,000 cubic feet, eighteen times greater than the TC-14. When seen in the air, the huge size of the Hindenburg and the comparatively small size of the TC-14 are not realized because of distance and height. Visitors at the Scott Field airship hangar, when getting a close-up view of the 236-foot TC-14, realize that it is fairly large and fail to visualize the difference between it and the Hindenburg. A minute comparison will reveal a world of difference between the two airships.

Externally, the first difference that will be noticed is that the TC-14 control car is located almost centrally on the lower side of the envelope and that its three motors are attached directly onto the control car; two on outriggers, one at each side, and one just inside the rear end of the car with the propeller shaft extending to the outside. The Hindenburg's control car is located on the underside of the hull near the nose, and its four motors are located, two on each side, near the central portion of the airship. The power plant of the TC-14 totals 730 horsepower as against 4400 horsepower for the larger ship.

Another prominent difference is that the TC-14 has five tail surfaces, while the Hindenburg has only four. Of the TC-14's five surfaces, the upper one is a stabilizer, the two lateral ones are for elevation, and the two lower ones, set at approximately 45 degrees from the perpendicular, are for directional control. The Hindenburg has the four conventional tail surfaces; the upper one is a stabilizer, the two lateral ones are for elevation, and the lower is for directional control.

The TC-14 has a flat cone-shaped plate with a series of wooden battens attached to its nose, the purpose thereof being to give a pointed shape to the nose against the wind pressure in flight. The Hindenburg has the same type of cone-shaped plate which is built onto the interior framework and is not visible from the outside.

The real difference between the TC-14 and the Hindenburg is neither the size nor the external appearance but their basic structure, Like plants and animals, airships are continually undergoing evolution. The first aircraft were balloons inflated with wood smoke. These were followed during the next hundred years with various inventions for motorizing them. The first successful motorized balloons are known as the non-rigid type. They had no framework inside or along the bottom of the inflated envelope. The car is suspended on rigging attached either to the outside of the envelope itself or to catenary bands along the top inside of the envelope. This class of airship is most efficient in the size ranging from 80,000 to 400,00 cubic feet capacity. The TC-14, a 360,000 cubic-foot non-rigid craft, is just below the maximum size for this type.

The second class of airship design is known as the semi-rigid, a development just preceding the World War. This class of airship has a large inflated envelope, on the underside of which an aluminum framework, called a keel, extends from nose to tail. This keep is supported by rigging attached at numerous points to the inside of the envelope. The control car and motor gondolas are attached directly onto the keel itself. The size of this type of airship ranges from 400,000 to 1,000,000 cubic feet gas capacity.

The third class of airship is the rigid type, which was first designed and constructed by Count Zeppelin in the 1890's. The rigid airship has an aluminum framework which houses a number of separate gas cells and to which are attached the control car, motor gondolas and surfaces. Inside the framework there are, in addition to the gas cells, fuel tanks, water ballast tanks, freight storage rooms, airplane storage space and quarters. This type of airship is most efficient in size from 1,000,000 cubic feet gas capacity and upwards. To date the largest airship of this class which has been built is the Hindenburg.

The most necessary item in the structure of the TC-14 is, of course, the envelope, for without it there would be nothing to hold the lifting gas. In the case of the Hindenburg, the outside envelope serves only as a skin or cover for the airship, as the gas is stored in separate cells inside the aluminum framework. If the envelope were removed, the inside gas cells, storage tanks and other portions would be exposed to the weather - but the airship would rise. There would be, however, insurmountable difficulties in steering the airship without its outside envelope, because there would not be a great rush of air over the tail surfaces. The motors would pull the ship forward in a straight course that could be changed only by the force of the winds.

Thus, in the case of the Hindenburg, while the envelope is not an absolute necessity for ascension, it is necessary for navigation and for the protection of the interior of the airship against the destructive effects of the outside air. Further, the shape of the airship envelope is important from the standpoint of efficiency in fuel consumption, speed and directional control. Both airships incorporate the latest improvements in streamlining, are gently and evenly rounded from nose to tail, and there is no great bulge near the nose. They are the latest developments in their respective lines. The Hindenburg has a maximum speed of 90 miles an hour against 85 m.p.h. for the TC-14; can carry 100 people, 7700 gallons of fuel and make a continuous flight of 8750 miles. The TC-14, with a fuel-carrying capacity of 1320 gallons, can carry 10 people and make a continuous flight of 2500 miles.

Regardless of their structural differences, they both resemble silvery cigars in the sky, and they are the very latest models in their particular class of transportation.

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RADIO TALK FROM AIRSHIP TC-13

During the recent celebration of the second birthday of the Junior Birdmen of America, a talk was broadcasted from the TC-13 airship at Moffett Field, Calif., and rebroadcasted by Station KYA, San Francisco. Major Bursette Palmer, Air Reserve, Field Director of the Junior Birdmen, held a two-way radio conversation with Station KYA, describing the organization and introducing Major Clarence B. Lober, Commanding Officer of the 19th Airship Squadron, Moffett Field, which operates this airship.

Explaining the construction and operation of the TC-13, Major Lober stated, in substance, that this airship was the only one operated on the west coast by our military service, and with its 360,000 cubic feet volume may appear as a toy compared with the 6,500,000 cubic feet volume of the former queen of the sky. While containing a little over 5% of the volume of the largest rigid airships thus far built in this country, this non-rigid airship has 25% the range and 90% the speed of the large ships and, due to several contributing factors, is able to withstand more severe weather conditions.

The envelope of the TC-13 is constructed of 3-ply rubberized cotton fabric, the shape of which is maintained by always having within a greater pressure than that of the surrounding air. Within the hull are two air chambers or ballonets, one toward the front, the other aft, the remaining and larger part of the hull containing helium. As the barometric pressure or density of the external air changes, due to variations in either or both weather and altitude, the difference between the internal and external pressures would vary if some adjustments were not made. To prevent excess pressure which, if too great, would burst the hull, pressure relief valves, seven of them, 20" in diameter, are connected to the air or gas spaces in the hull. To raise the internal pressure, scoops are provided behind the propellers, thus taking air into the hull, the pilot controlling its flow to either the forward or rear air chamber, as desired, to maintain proper balance. The airship car contains an engine-driven blower for the same purpose, used whenever the forward speed of the ship is too slow to permit use of the other method, such as in approach for a landing or while moored away from the hangar.

To the hull are affixed battens or ribs to stiffen the nose and control surfaces to obtain, dynamically, horizontal and vertical control in flight. The airship car is suspended from ten steel cables which extend obliquely upward through the hull to two longitudinal catenary cables fastened to the hull near the top by means of fabric curtains, one on either side of the center line.

The car, covered with fabric and aluminum sheet, and about 40 feet long, 8 feet wide and 10 feet high, is constructed of chrome-molybdenum steel tubing. The upper portion of the car contains twelve 110-gallon fuel or ballast tanks and two smaller tanks, one for engine oil and the other for water. Five of the tanks are provided with dump valves so that fuel or ballast may be released if it becomes necessary to reduce the weight of the ship to obtain static equilibrium, so that at low flight speed the ship would not lose altitude. Two are slip tanks, i.e., the entire tank with contents, weighing about 750 pounds, could be instantly dropped if added lift were needed in an emergency.

The normal crew of the TC-13 is nine. In the pilot's compartment the altitude pilot is seated on the left. Before him are controls for the seven gas or air valves in the hull, controls to govern the release of ballast, an inclimometer to indicate the angle of pitch of the ship, four manometers, one a liquid type for checking the three mechanical type instruments, one connected to each air chamber, and one to the gas chamber. Above these are mounted an airspeed meter, rate of climb indicator, and an altimeter. Besides these are the two engine throttles, the master ignition switch, the signal switch by which instructions can be given the engineer, the release for the landing ropes, and on the right a large wheel in the fore and aft plane which the pilot is turning, checking the oscillations in pitch and smoothing out the flight path.

The direction pilot is seated behind a slanted wheel, much like that in an automobile, with a compass, drift meter, clock and radio compass indicator to keep him company. In a rack above the head of each pilot is his parachute, which can readily be attached to his harness. In a small box behind the direction pilot is a day's emergency ration for the crew. On a table are various navigation instruments and data to enable computations to be made of the position of the airship.

To the rear of the radio operator on the right side of the car is the bomber's seat, before which is the bomb sight, and to the right of which are the electrical controls, the operation of which will release bombs either singly or in salvo. On either side of the car, on outriggers, are mounted two Pratt and Whitney "Wasp" engines of 450 h.p. each, to which 3-bladed aluminum propellers of 12 foot diameter are attached. Between the outriggers, in the car, is seated the engineer, with the controls and instruments necessary to engine operation conveniently arranged about him. Behind him, on the left, is the radio transmitting equipment and, opposite, the galley with its water supply and electric hot plate arranged on a convenient cabinet, in which is stored the galley equipment. The remaining space to the rear is occupied by sleeping accommodations for four, and the well, out of which can be lowered the sub-cloud car. This is a streamlined affair just large enough to seat one person, and it can be lowered 1,000 feet below the airship, permitting the observer to report by telephone the presence, location and disposition of an enemy force, while the airship remains concealed in the clouds above.

Airships are peculiar in their ability to hover, i.e., to maintain their altitude without need for forward speed, and are noted for their long range and long flight duration. The TC-13 has been in commission three years, during which time it has been in flight nearly 2600 hours. Flights of 20 hours or over have been made once or twice each month during that period. In January, 1935, a flight was made from Langley Field, Va., to Miami, Fla., during the course of which the airship remained moored out on a portable mast for four days. Later in 1935, the ship was flown from Langley Field to Scott Field, near St. Louis, a distance of about 800 miles. In November of last year, it was flown from Langley Field to Moffett Field, Calif., via Shreveport, La.; San Antonio, El Paso, Texas; and March Field, Riverside, Calif. The first leg of this journey was over 1,000 miles.

Just about a month ago, the TC-13, piloted by Captain Lawrence A. Lawson, remained in the air over 76 hours, and landed with more than enough fuel for another 76 hours. A few days later, Capt. Lawson made an extended flight of over 1800 miles at an air speed of 85 miles per hour, landing with enough fuel for 580 more miles, or a total demonstrated range of 2380 miles under normal wind conditions. These are the characteristics of a real aircraft of military value. Of course, the speed of 76 miles per hour is low compared with that of modern airplanes, but speed is not an essential or even a desirable characteristic for the conduct of harbor patrols, scouting for submarines and mines, convoying surface craft, and similar missions.

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Lieut.-Colonel Frank M. Kennedy, Commanding Officer of Scott Field, Ill., commenced the annual summer airship night flying on May 14th, by making a 12-hour flight in the TC-14, on the St. Louis - Indianapolis radio beam, covering a distance of 500 miles. The TC-11 airship also flew 500 miles on a 12-hour flight the same night.

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BALLOON ACTIVITIES AT FORT SILL, OKLA.

Local weather conditions aiding, the 1st Balloon Squadron at Fort Sill, Okla., has been busy tucking flying hours under its belt. Any hour of the day finds the captive balloon aloft on a mission. Free ballooning has been very nearly as popular, each pilot of the squadron having placed to his credit at least one cross-country in the 19,000 and 35,000 cubic foot class. This activity is popular among the officers of the Field Artillery School at Fort Sill, each "hop" attracting many prospective passengers from the School, who are eager to try this new experience. Heavier-than-air pilots find these balloon trips instructive and pleasant in new experience.

May 7th was demonstration day at the big balloon hangar. The students of the Field Artillery School were given an extensive and comprehensive lecture and inspection tour covering the operation and handling of the observation balloon. Details included were field maneuvers, gassing the balloon, ground defense, telephone nets and photography. Officers of the School found the demonstration so satisfactory that it is to be included in the regular curriculum, which is quite complimentary.

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Major James H. "Jimmy" Doolittle, Air Reserve, recently completed two weeks of active duty in the Office of the Chief of the Air Corps, and was attached to Bolling Field for flying. On May 20th, Major Doolittle, along with several other officers attached to the Chief's office, attended the conference at Langley Field of the National Advisory Committee for Aeronautics.

OBITUARIES

Fate decreed that Wright Field should lose two of its officers through airplane accidents - Captain William L. Scott, Jr., on May 17th, and Major Hez McClellan on May 25th.

A resident of the District of Columbia when he received a West Point cadet appointment, Captain Scott graduated from the U.S. Military Academy in June, 1923. Detailed to the Air Corps to undergo flying training, he graduated from the Primary Flying School, Brooks Field, Texas, March 25, 1924, and from the Advanced Flying School, Kelly Field, Texas, September 13, 1924, specializing in Bombardment. He was then assigned to station at Bolling Field, D.C., where he performed, among other duties, those of Assistant Engineering Officer. From September 9, 1929, to January 19, 1932, he was stationed at Rockwell Field, Calif., being Operations Officer of the 11th Bombardment Squadron.

From February 10, 1932, to December 28,1934, Captain Scott served a tour of duty in the Panama Canal Department, being assigned to the 25th Bombardment Squadron. For a little over six months thereafter he was stationed at Langley Field, Va., with the 96th Bombardment Squadron, serving as Armament Officer and Flight Commander. By virtue of holding the latter position, he was promoted to the temporary rank of Captain on April 2, 1935. He began his course of instruction at the Air Corps Engineering School at Wright Field during the latter part of July, last year.

Captain Scott was promoted to the regular rank of Captain on August 1, 1935. At the time of his untimely death he was 37½ years of age.

Major Hez McClellan, Air Corps, was considered a superior pilot, one with extensive experience in long-distance navigation flights. His assignment in November, 1935, as Chief of the Flying Branch, Materiel Division, Wright Field, Ohio, was in tribute to his exceptional ability as a pilot of all types of aircraft.

Born at Hall, Indiana, May 1, 1894, he attended grammar schools in his native city and Indianapolis, Ind.; graduated from high school at Indianapolis, and completed two years of study at Butler College in that city. He enlisted in the Aviation Section, Signal Corps, December 8, 1917; graduated from the School of Military Aeronautics, University of California, Berkeley, March 30, 1918, and, following a month's duty at the Aviation concentration camp at Camp Dick, Dallas, Texas, was ordered to Kelly Field, Texas, for his flying training, upon completion of which he was, on September 7, 1918, commissioned a second lieutenant and assigned to active duty at Kelly Field. Shortly thereafter he was assigned to duty as student at the Instructors School at Brooks Field, Texas, and, upon the completion of the course of instruction thereat, returned to Kelly Field for duty in the Flying Department as instructor.

Transferred to the Philadelphia District Ordnance Officer, Major McClellan, after a little over a year's duty at that station, was commissioned a second lieutenant in the Air Corps, Regular Army, July 1, 1920, and assigned to duty at the Primary Flying School at Carlstrom Field, Arcadia, Fla., as Flying Instructor. He remained with this School when it was transferred to Brooks Field, Texas, at that time holding the position of Stage Commander.

In August, 1926, Major McClellan was ordered to duty in the Philippines and, upon the completion of his two-year tour of duty in the Islands, was assigned to Mitchel Field, N.Y. From September, 1932, to June, 1933, he was a student at the Air Corps Tactical School at Maxwell Field, Ala. Following his graduation, he was assigned to station at Bolling Field, D.C.

Major McClelland qualified in aerial navigation and instrument flying, taking a course in instrument flying in 1934 at the School conducted at Wright Field, under the supervision of Major Albert F. Hegenberger, and the course in advanced air navigation at the School at Rockwell Field, Calif., during 1935.

In November, 1935, he was assigned to Wright Field, Dayton, Ohio, as Chief of the Flying Branch, and was given the temporary rank of Major.

Major McClellan participated in the flight of ten B-10 Martin Bombers from Washington, D.C., to Fairbanks, Alaska, and return, July 19 to August 20, 1934, serving in the capacity of Supply Officer. This flight involved a total distance estimated at approximately 8,290 miles, and was led by Lieut.-Colonel Henry H. Arnold, now Brigadier-General and Assistant Chief of the Air Corps.

From the period June 12 to August 14, 1935, Major McClellan, accompanied by Sergeant Tamosan and Corporal Krause, and piloting a Douglas C-29 Amphibian, accomplished an airplane reconnaissance of the routes to and from Alaska and throughout the territory of Alaska. During this period he flew on 38 days a total of 153 hours and 25 minutes, and secured a splendid photographic record of the places visited. The time on the ground was spent in ground reconnaissance, both visual and photographic, in necessary airplane maintenance, and in securing information from the inhabitants. Many of his flights in Alaska were truly pioneering in character. His was the first military airplane ever to land at Point Barrow, or to return from Point Barrow to Fairbanks over the route taken. This route was mostly over terrain uninhabited and for which the details of the map carried were entirely inadequate to afford a reasonable expectation of safe progress over the ground in the event of airplane failure. The terrain is among the most rugged, desolate and difficult of traversing on foot of any in the world.

Major McClellan, during this expedition, was on his own initiative. The comprehensive character of the survey made by him, as evidenced by the very excellent and complete report submitted by him covering this survey, gave ample evidence of the intrepidity and resourcefulness of this officer. The nature and extent of the flying accomplished was extremely hazardous and beyond the call of ordinary duty. The successful performance of these flights reaffirmed his distinguished ability as an exceptional pilot and as an officer of excellent professional attainments.

For this pioneering flight, Major McClellan was recommended for the award of the Distinguished Flying Cross. His total flying time was well over the 5,000-hour mark.

The Air Corps extends its sincere sympathy to the bereaved families of the deceased officers.

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CATERPILLARS

The latest entrant into the mythical aeronautical fraternity of Caterpillars is 2nd Lt. Frank J. Bennett, Air Reserve, 36th Pursuit Squadron, GHQ Air Force, Langley Field, Va., who was forced to "bail out" of a P-12F type airplane at about 3,000 feet, due to a broken oil line and subsequent engine failure.

Lieut. Bennett was returning from Danville, Va., on a night navigation training mission and was about 18 miles out when the failure occurred. The airplane crashed in a ravine near Spring Garden, Va., and was completely wrecked. The pilot drifted to earth with his parachute about a mile from the wrecked airplane, landing in a small field, and was uninjured. He states that when he realized he had to jump he had no apprehension. It all seemed perfectly normal and natural. Due to the darkness, he had no sensation of descent until very near the ground. His flashlight was of considerable help upon landing.

Flying Cadet James L. Bledsoe, of the Pursuit Section of the Air Corps Advanced Flying School, was returning from a student night cross-country training flight on May 11th, when his engine developed trouble. Returning from Fort Clark, Texas, at an altitude of approximately 2,000 feet, Cadet Bledsoe had reached a point about three miles southeast of Hondo, Texas, when his engine suddenly quit. Although he had gasoline remaining in his auxiliary tank, he changed to his main tank and used the wobble pump in an effort to regain his engine. It caught again and ran for only a few minutes before it stopped the second time. Cadet Bledsoe dropped one flare and saw what he thought was a satisfactory emergency field. When directly over this field he released his second flare, which failed to ignite. Having insufficient illumination for a landing, he climbed out onto the wing and was in the act of leaving the airplane when the engine again picked up. He was unable to regain his position in the cockpit or control the airplane from his position on the wing, so the two soon parted company. He landed without injury and promptly notified the officials at Kelly Field. The airplane, of course, was completely demolished.

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GRADUATION DATE FOR ADV. FLYING SCHOOL CLASS

The students of the present class at the Advanced Flying School, Kelly Field, Texas, consisting of 9 officers and 53 Flying Cadets, are scheduled to graduate on Wednesday, June 17, 1936. Graduation Review is scheduled at 9:30 a.m., and Graduation Exercises at the post theatre will take place at 10:45. All of the students are anxiously awaiting word as to their assignment to station. The Cadets in particular are concerned, because the majority of them have made application for commission in the Regular Army, in compliance with the provisions of Circular No. 20.

The Pursuit Section of the Air Corps Advanced Flying School departed on May 18th on their maintenance navigation training flight, which took them through Barksdale Field, La.; Fort Sill, Okla.; Lubbock, Texas; Roswell, New Mexico; Fort Bliss, Marfa, Dryden and Fort Clark Texas. Upon arrival at Fort Sill, Cadet J.V. Boyer became so ill from exposure to poison ivy that it was necessary to dispatch the airplane ambulance from Kelly Field to his assistance. The ambulance was flown by Captain R.C. Rhudy, who was accompanied by Lieut. J.E. Blair. The latter flew Cadet Boyer's plane back to Kelly Field.

The personnel of the Attack Section of the School departed on their maintenance navigation training flight on May 20th, their route being Kelly Field to Abilene, Texas; Fort Sill, Okla.; Midland, Texas: Carlsbad, New Mexico, Fort Bliss, Texas, and return by way of Dryden, Tex.

The Bombardment and Observation Sections were scheduled to depart on May 25th and June 1st, respectively. and to follow approximately the same itinerary as the other Sections. Due to the shortage of airplanes at Kelly Field, it will probably be necessary to split the Bombardment Section into two flights, in which event the second flight will depart on June 3rd.

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During the recent Fiesta San Jacinto in San Antonio, the usual pilgrimage was made to the Alamo, the Shrine of Texas Liberty. The march to the old fort was made on foot and was participated in by many officials and citizens of all classes from all over the State, bearing floral tributes to the Shrine. Each Army station in San Antonio and vicinity was represented by an enlisted man. The San Antonio Air Depot was represented by Sergeant H.R. Riley, of the 3rd Transport Squadron, who carried a large wreath, prepared by Major Walter Hitzfeldt, Post Quartermaster, and composed of the gorgeous flowers of every hue which grew in such variety and profusion at that station. In this wreath, the words "Duncan Field" were worked out in flowers.

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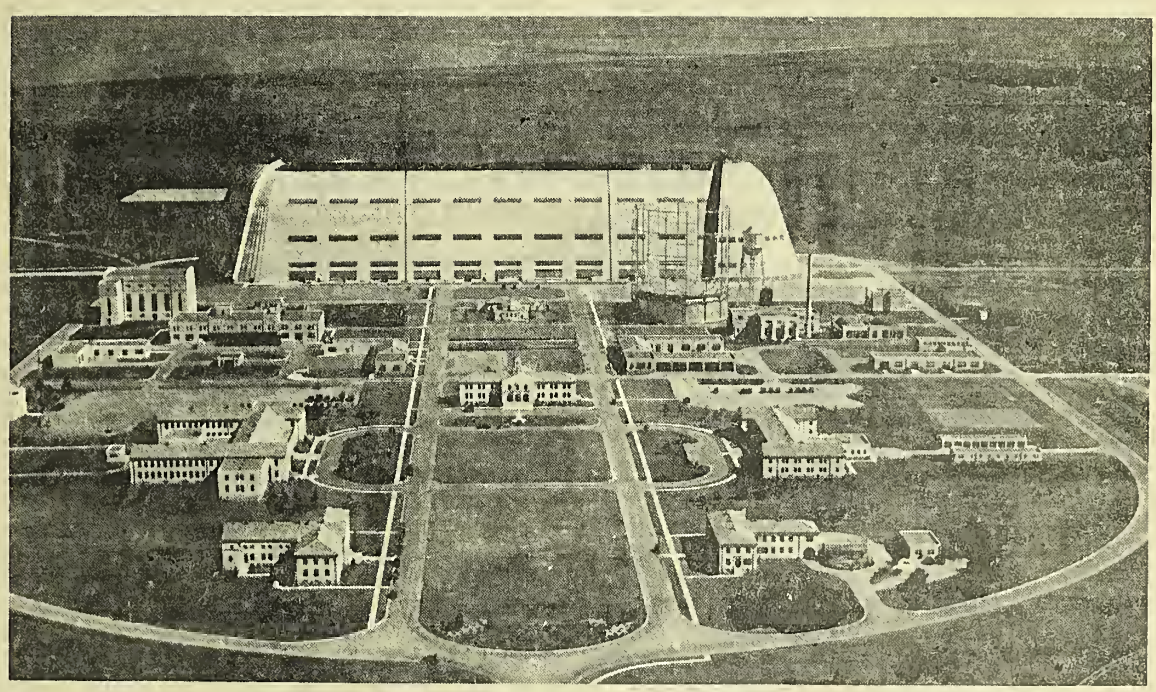
The thanks of the News Letter is extended to Sergeant Lindquist, Air Corps, Connecticut National Guard, for the cover design featuring this issue of the News Letter. Sergeant Lindquist contributed a cover design on a previous occasion, and we hope to hear from him again.

AIR CORPS NEWS LETTER

Issued by the Chief of the Air Corps
Washington, D. C.



MOFFETT FIELD, SUNNYVALE, CALIF.

JUNE 15, 1936

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VOL. XIX **Air Corps News Letter** NO.12

Information Division
Air Corps
June 15, 1936
Munitions Building
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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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AVIATION PREPAREDNESS

DURING the progress of "National Defense Week" at Spokane, Wash., recently, Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, flew to the West Coast and, addressing a meeting of the Northwest Aviation Planning Council, congratulated that body on taking steps towards securing aviation development in accordance with a definite, well thought out plan.

The substance of some of the subjects touched upon by General Arnold in his address is given below.

Pointing out that the Northwest is geographically the aerial gateway to Alaska, he stated that nature has provided two excellent aerial routes to follow towards the north. With the sparsely populated plains west of the Missouri and the great Rocky Mountain system intervening between the preponderating mass of population concentrated in the eastern centers of this country and the Pacific Northwest, this latter territory might well be considered, from a strategic standpoint, a far-flung political entity of this tremendous Republic.

Progressive changes in the means of waging warfare at great distances over what have heretofore seemed to be insurmountable difficulties of ocean have tended to make the security of the West Coast a major problem for our General Staff. Those who work with globes and great circle charts know that the broad oceanic expanse becomes a relatively short distance when traveled along great circle routes.

Alaska is the key to the defense of the Northwest and the key that logically falls into the keeping of the Air Corps. Interior Alaska is a place that a strong aviation force might seize, occupy and hold for a long period of time.

Today, as always since civilization began, there are many rumors of war coming across the seas. Fortunately, so far these rumors have not developed into actualities. It is possible that the threat from the air - the unknown power of bombing squadrons and the lack of knowledge as to the destructive power of an air attack has something to do with the reluctance of nations to enter into war.

Our war plans must be made to conform to the best combination of war instruments that might be brought against us. We must assume that what we have others also may have. It would be false security to assume that our engineers or factories are better than those of other nations.

Our air force in the National Defense scheme must be mobile in order to be effective, and must be able to span the territory from coast to coast in less than 24 hours. Bombardment groups should be ready to move from one base to another to locate themselves in strategic positions for striking. There must be many prepared airdromes for dispersing our air force so that our planes will not be caught massed together. Supply bases and bomb dumps should be located at points where they will be most needed.

The procurement of 500 new planes from 1937 funds, supplemented by 500 more planes the following year, will bring us nearer to our authorized airplane strength, but we will not have the men to fly them unless our officer strength is increased.

The day of having a pilot go out and fly any type of plane is a thing of the past. The newer type planes have made cow pasture landing fields of bygone days absolutely out of the question.

In our base areas we must have prepared airports for the use of our air force. Those fields used in time of peace for private flying and commercial operations become in time of emergency advance bases, reloading and servicing points and fields upon which the masses of planes can be dispersed for protection.

For many years commercial and military air developments have progressed hand in hand, and the great work of aviation development now being undertaken by the Northwest Aviation Planning Council is a most important step in conformity with that policy. An effective air force does not grow up overnight. It is brought into being by careful planning, strict training, well thought out engineering, experiments and development, well managed mass production of planes and equipment and daily operation of tactical units in conformity with approved tactical principles. These things are now being done to create an air force which can take its place as an effective part of our National Defense machine.

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CITIZENS OF NORTHWEST SEE NEW PLANES

Lieut. Colonel C.L. Tinker, commanding the 7th Bombardment Group at Hamilton Field, San Rafael, Calif., flew to Felts Field, Spokane, Wash., to attend the National Defense Week Demonstration held there May 29th, 30th and 31st, and to place on exhibition the new Martin B-10B Bomber to enable people from Spokane and the Pacific Northwest to get an idea of what the Army Air Corps has in the way of modern equipment to contribute to our National Defense.

On his return trip Col. Tinker flew to Seattle to visit the Boeing Aircraft factory and to view some of the new and latest developments in the line of Bombers being constructed for the Army Air Corps.

The National Defense Demonstration, staged by the National Guard air units from all over the United States, and the Infantry, Artillery and smaller ground units from the States of Washington, Idaho and Montana, was held on the spacious and up-to-date Felts Field in Spokane. Some forty National Guard airplanes were gathered there from States as far distant as Massachusetts and Tennessee, and together with the ground forces from the Pacific Northwest, placed before the people of Spokane a three-day demonstration of what our National Guard defense consists of, what it has accomplished with a limited amount of equipment and time for training, this in order to give the public some insight into what is needed in the future to insure for this country adequate and proper military defense. While at Felts Field, all the units were under the command of Colonel Aston of Spokane.

The Regular Army Air Corps contributed its share to the demonstration by sending two of the latest Pursuit type airplanes from Selfridge Field, Mich., a Boeing P-26 A and a Consolidated PB-2, flown by Lieut. J.O. Neal and Captain Walter E. Todd, respectively. Captain Leroy A. Walthal came from Barksdale Field, La., in one of the Air Corps' latest Attack planes, a Northrop A-17. In addition to these modern fighting planes, there were Martin Bomber flown by Col. Tinker, and the new Observation plane, the Douglas O-46A, from Wright Field, Dayton, Ohio. All these planes were new to the eyes of the people in the Northwest, and the Attack plane had never before been exhibited to the public in any part of the country.

On Friday, May 29th, the National Guard aviation units put on a demonstration of their work in the air, and broadcasted from their planes in the air to the crowd, through the public address system, to keep those not well versed in air tactics posted on each maneuver. On the following day, the ground troops of the National Guard from Washington and Idaho staged a sham battle with some of the modern equipment of our Infantry and Artillery being brought into play. On May 31st, the combined forces of air and ground took part and demonstrated to the public just how the airplane will act as the eyes of the Army during actual hostilities. New motorized units of 75 millimeter guns were rolled onto the field, set up, trained, loaded and fired. Latest type of machine guns were wheeled into position on the sham field of battle and fired with their characteristic rat-a-tat-tat. Trench mortars and one-pounders were used, and machine gun and small-bomb attacks were made on ground troops from low flying attack planes. An exhibition of the adjustment of Artillery fire by airplanes flying over the target and reporting to the batteries by radio was given the spectators through the public address system, and Captain Claude Owen, of the 41st Division Aviation, Washington National Guard, gave a demonstration of dive bombing with 50-pound aerial bombs.

Brigadier General Henry H. Arnold, flying a B-10B of the 7th Bombardment Group, topped the list of notables who were present for the week-end maneuvers and the defense and aviation meetings which were held in the beautiful Davenport Hotel in Spokane. Representatives of the Department of Commerce, prominent Airline officials, and many important figures in the aviation industry in the United States were present to attend the Northwest Aviation Planning Council Meet, held in Spokane on May 28th and 29th.

The entire Defense Demonstration proved to be a big success, and it was felt that the public had been given something which would make them conscious of the fact that this country of ours needs a bigger and better system of National Defense, backed by each individual in spirit and organized by the country as a whole.

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Air Corps officers under orders to report July 1, 1936, to Kelly Field, Texas, for duty, are -

Captains Leland R. Hewitt and George M. Palmer, from the Command and General Staff School, Fort Leavenworth, Kansas;

1st Lieut. John C. Covington from Fort Bragg, N.C.;

1st Lieuts. John H. Ives and Troup Miller, Jr., from Langley Field, Va.

Captains Robert S. Macrum, Brooks Field, and Philo G. Meisenholder, Barksdale Field, are under orders to attend the Harvard Graduate School of Business Administration, Cambridge, Mass. They are relieved from temporary rank in September.

JUNGLE EMERGENCY LANDING KITS

By the Scott Field Correspondent

THE Army Air Corps is always endeavoring to advance flying safety and to lessen the flying risks of its personnel to a minimum. In spite of the fact that all Air Corps pilots are carefully selected, highly trained men, and despite the many precautions taken, forced landings sometimes occur. Although the Army Air Corps is on the alert for unforeseen weather changes and radios the latest information to all pilots in the air, they are sometimes trapped in predicaments from which there is no escaping a forced landing.

In the tropics, Army pilots are required to fly on routine work over jungle regions where impassable growths of vines and continuous forests of huge trees make airplane landings extremely hazardous. In the event of forced landings over such territory, the pilots and observers are usually able to escape with minor injuries by resorting to their parachutes. This is usually only the beginning of their troubles. The real problem is to reach civilization. Just imagine a man forcing a passage through the dense foliage and shrubbery of the jungles - fighting every inch of the way. Then add to the struggle against nature injuries which are untreated and are open to poisons and infections; hunger and no food to appease it; thirst, and only poisonous, contaminated water to drink; mosquitoes and many other insects biting and stinging thru torn clothing; wild animals and reptiles hungering for food, human or otherwise; and then, the inability to tell one direction from another in the shadowed twilight of the dense jungles. This is the situation facing the occupants of airplanes who encounter trouble while flying over the tropical jungles.

After several sad experiences by the Army Air Corps in Panama, it was found that pilots must carry the cure-all with them in a small bag when they jump from their planes over dangerous jungles. Experiences later proved that in most cases occupants of planes became separated from their airplanes and their emergency supplies. A new idea had to be worked out in connection with these enforced jumps, one which insured that the emergency supplies went with the jumpers instead of with the plane, which in most cases could not be found by the men after they had landed.

The new emergency kit is an ingenious method of enclosing the necessary articles in the seat of the parachute. This prevents flyers from being separated from their emergency equipment, as the parachute container goes down attached to the parachute pack. To accomplish this, the air-inflated cushion of the parachute is removed and a pack exactly the same size is inserted in its place. This pack, now known as the "Jungle Emergency Landing Kit," is so fabricated that it acts as a cushion for the pilot when he is seated in the airplane, the contents thereof not being damaged by the pilot's weight.

The contents of this kit are a standard Army Engineer Corps prismatic compass, the best instrument of its kind made; a bolo knife (machette) which is heavier and wider than the bayonet which it resembles; a standard Army mosquito headnet which will protect the man's head and neck from insect bites; a waterproof box filled with matches; another waterproof matchbox containing a one-fourth ounce bottle of iodine; a small bottle of quinine to be used as a preventative for fever; a standard Army caliber .45 pistol with ammunition; and two pounds of emergency rations enclosed in a moisture-proof airtight container.

With this equipment a pilot who is forced to land in any jungle region is made as safe as possible from marauding animals, pestilent insects, hunger, sickness, unprotected wounds and scratches, loss of direction and, lastly, he has the necessary equipment and material to cut a passage through the undergrowths in the jungle.

The jungle emergency landing kits are to be standard equipment for all pilots who are required to make flights over jungle country. In Panama and in the Philippines such flights are of everyday occurrence and, fortunately, forced landings are few and far between. But just as a precaution, all pilots and observers will be required to be equipped with these safety kits. The cost of the kit is extremely small, but its worth in an emergency where a life is concerned cannot be calculated. The Army Air Corps considers all safety devices in this same light - they are worth their weight in gold.

The Scott Field Engineering Department recently manufactured 50 of these jungle emergency landing kits.

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First Lieut. H.F. Gregory, Air Corps, stationed at Fort Sill, Okla., who was detailed on detached service at Langley Field, Va., and Fort Bragg, N.C., for service test of the Kellett Auto-Gyro, came home on a breathless trip between hops in the "flying windmill." He unloaded enough information about the unusual craft to make the pilots at Fort Sill eager to handle the stick and try out its performance, especially in cooperation with Field Artillery.

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First Lieuts. Robert K. Taylor, Randolph Field, and Archibald J. Hanna, Langley Field, were detailed to the Technical School, Chanute Field, as students, the former to pursue the photographic course, and the latter the Communications Course.

HAMILTON FIELD ENTERTAINS JUNIOR BIRDMEN

The San Francisco Bay Region Junior Birdmen of America were entertained in true Air Corps style at Hamilton Field, San Rafael, Calif., on Sunday, May 24th. Young designers and builders of model aircraft were allowed an opportunity to flight test their own special creations.

Notable among the models was one powered with a miniature gasoline engine and controlled from the ground by means of a single long, light, wire through which both rudder and elevator control were manipulated. Lateral control could not be effected. The only difficulty was that this particular model persisted in ground looping on the take-off due to a defective tail wheel. Another model made use of the vaned-rotor principle in order to give it lift. The rotor was mounted on an axis parallel to what would have been the axis of a wing. Like an autogyro, the rotor was not power driven during flight, and it flew successfully. There were many sorts of gliders and carefully constructed, rubber band-driven models.

Lieut.-Colonel Clarence L. Tinker, the Commanding Officer of the 7th Bombardment Group, ordered the units under his command to demonstrate various squadron tactical and training maneuvers for the benefit of the Junior Birdmen of America.

The 88th Observation Squadron, using one of its O-27's, conducted simulated aerial gunnery practice, while Captain Kelly, piloting an O-35, made simulated aerial gunnery attacks on the target as it passed over the field.

Varied tactical and show formations were demonstrated by the 11th Bombardment Squadron with a 9-plane formation. This Squadron, now equipped with the new B-10B's, and under the command of Major Ridenour, has developed a regular routine for just such occasions, and pilots of the unit execute the changes from one formation to the next with precision and rapidity. The demonstration formation was led by Major Ridenour, with Captains Harding and Lyon leading the second and third elements. The general routine consists in passing over the field first in javelin-up formation, that is, a column of elements, then, shortly thereafter, the squadron starts a fast 180 degree turn, just before the conclusion of which is given the command of execution for the next maneuver. Just after the pass-over of the field is made each time, a signal from the leader directs the Squadron back into javelin-up, and thus it is prepared for the next order. In rapid succession the squadron went through a series of formations: javelin-up, squadron wedge, echelon of elements, echelon of individual planes, squadron diamond, spear head, javelin-down, and finally a series of staggered-element turns, elements crossing over on each turn. The finale was a low-altitude pass-over of the field as though in review. The real feature of such maneuvers to one who is used to watching formation flying is not the closeness of individual planes nor the fact that such patterns can be flown, but it is the uniformity of the patterns coupled with the accuracy and speed with which a unit can change from one formation to another as the 11th Squadron is able to do.

The squadron commander of the 9th Bombardment Squadron, Major Davies, operated the bombsight for the individual dropping of six bombs on the water target just off the edge of the field in the shallow water of the bay. Spectators were impressed with the accuracy of modern bombing equipment. Lieut. King led a three-plane element of the 9th Squadron B-12's in a simulated attack on the field itself.

The 31st Bombardment Squadron, temporarily stationed at Mather Field for bombing practice, did not participate in the day's maneuvers.

The 7th Group Armament Section had on exhibition bombs of all sizes, machine guns, and other armament equipment. An actual explanation and demonstration of the operation and control of the bomb racks was given on the Martin B-12 which was on display. Displays were presented by the 88th Observation Squadron, Photo Section and the Parachute Department. The day's activities were concluded by a parachute jump by Private, 1st Class, C.R. Chain of the 69th Service Squadron.

The Junior Birdmen had a chance to demonstrate their prowess as airplane designers and an opportunity to see the Air Corps in action. All in all, it was a very satisfactory day.

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ASSIGNMENT OF ADV. FLYING SCHOOL GRADUATES

Upon the completion of their present course of instruction at the Air Corps Advanced Flying School, Kelly Field, Texas, the following-named Air Corps officers are under orders to report for duty at the stations designated:

Captain Reginald R. Gillespie to Chanute Field, Rantoul, Ill.

Captain Wilfred J. Paul to Hamilton Field for duty with GHQ Air Force.

Captain John G. Salsman and 1st Lieut. Ralph E. Holmes to Brooks Field, Texas, for duty with the 12th Observation Group.

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Effective July 1, 1936, the following-named Air Corps officers, now on duty as students at the California Institute of Technology, Pasadena, Calif., are assigned to stations, as follows:

To March Field, Calif.: Captain Perry Wainer.

To Hamilton Field, Calif.: 1st Lieut. Harold H. Bassett.

To Barksdale Field, La.: 1st Lieut. Leon W. Johnson.

NAVIGATION TRAINING, 7TH BOMB. GROUP

There are two projects in navigation in the 7th Bombardment Group which as yet have not had a thorough test but which, it is believed, will prove interesting. The first of these is the plotting of ships' positions at sea by weather reports and the second is the plotting of airplane positions by means of goniometric stations.

Concerning the first, weather reports are transmitted by ships at sea at zero hours and at twelve hours Greenwich Civil Time. These reports are received by the Department of Agriculture and sent out to all stations equipped with teletype to be entered on weather maps. When the report is decoded, the reporting vessels' names and their positions are determined. These positions are entered on a plotting sheet and, after a number have been plotted, the courses and speeds of the vessels may be determined. This data may be used for interception problems. The plotting setup has been made in the 7th Group, Hamilton Field, and the plottings indicate that very accurate data may be obtained.

No actual problems, using the above data, have been flown, due to the diverting of vessels from San Francisco, because of strikes, a quarterly load test and a concentration of the 1st Wing at Hamilton Field. It is expected, however, that in the near future the data obtained will be used constantly for interceptions.

The second project, that of using goniometric stations for plotting airplane positions, has also not been given a thorough test. Two goniometric stations were borrowed from the Coast Guard. One was set up at Fort Funston on the edge of San Francisco and the other at the Presidio of Monterey. This gives a base line of 73 nautical miles. The procedure used is as follows: When the radio operator in the navigation airplane finishes sending out the position report as given to him by the navigator, he then sends letters Q.T.E., meaning "What is my bearing with respect to you?" This is followed by his identification call letters. He then sends the letters "M.O." continuously for 45 seconds and ends with the letter "K." During the 45 seconds the letters "M.O." are being sent, the goniometric stations are being lined up on the navigation airplane, and when "K" is received the exact time and bearings are noted. This information is at once transmitted to Hamilton Field to the plotting room. The plotter has been tracking the airplane from the message received from the navigator. He plots the bearings as sent from the goniometric stations and they are checked for accuracy. If a discrepancy occurs, it is checked with the navigator upon the arrival home of the airplane. All times used are synchronized prior to the mission with the time at Hamilton Field. Excellent results have been obtained from the station at Fort Funston, but the ones obtained from the station at the Presidio of Monterey have been poor, "and it is believed," says the News Letter Correspondent, "that the calibration of this station is off. It is hoped that this will be remedied in the near future so this work with the goniometric stations can be combined with the interception of ships at sea."

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MISSOURI GUARDSMEN TO CAMP AT FORT RILEY

According to a press announcement, the 35th Division Aviation, Missouri National Guard, will begin its annual encampment at Fort Riley, Kansas, July 12th. The Division is composed of the 110th Observation Squadron, the 110th Photo Section and Medical Detachment. A total of 100 enlisted men and 20 officers will be taken to camp. Training will be conducted in aerial photography, engine and airplane maintenance and radio communications.

The Commanding Officer of the 35th Division Aviation is Major P.R. Love.

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HOW THE 33RD PURSUITERS TREAT NEWLYWEDS

First Lieut. Richard C. Weller, a member of the 33rd Pursuit Squadron, 8th Pursuit Group, Langley Field, Va., upon his return to the post recently with his bride from a leave of absence, was met by the Squadron as a group. The bridegroom was made to drive his bride over the post in a specially constructed chariot. Donning a parachute, she climbed to the throne and was then handed a bludgeon. "With this bludgeon in her hands," says the News Letter Correspondent, "we expected no trouble from Richard. Everyone joined in the welcome, and a happy evening followed."

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BROOKS FIELD PILOTS IN MANEUVERS

A flight of three O-43A's left Brooks Field, Texas, on June 3rd for Maneuvers at Fort Leavenworth, Kansas, with Captain P.D. Coates in command. These maneuvers will be conducted June 4th to 19th, at which time the flight will go to Fort Sill, Okla., for maneuvers lasting from June 20th to 27th. Other members of the flight are Captains W.C. Dolan, R.S. Macrum, Lieuts. A.L. Guenther, S.R. Stewart and L.B. Hillsinger. A C-14 Transported crew men and equipment.

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Aerial gunnery was performed by the 20th Bombardment Squadron, Langley Field, Va., from March 26th to May 12th. During this period all assigned pilots qualified as Expert, as well as sufficient enlistedmen to make up 13 combat crews of expert gunners.

GENERAL ANDREWS VISITS HAMILTON FIELD.

Major-General Frank M. Andrews, Commanding General of the GHQ Air Force, arrived at Hamilton Field, Calif., on May 17th in his huge Douglas Transport. With him were his brother, Major J.D. Andrews, Jr., of the Corps of Engineers, and Col. Robert Olds, Inspector of the GHQ Air Force. Another distinguished visitor for the week end was Brigadier-General H.B. Clagett, Commanding General of the 1st Wing, who flew from March Field in a Martin Bomber, accompanied by Capt. J.L. Loutzenheiser.

Early in the evening a reception was held at the Officers' Club for General Andrews and his party. "It was a pleasant gathering, for a great many of us had not seen the General since the GHQ Maneuvers in Florida last December," says the News Letter Correspondent. "General Andrews spent Sunday night in the visiting officers' quarters at the Officers' Club. Next morning at an early Squadron Commanders' meeting at Group Headquarters, the new promotion bill was discussed. Of more import to most of us was the discussion of the reorganization to take effect at the beginning of the new fiscal year. It really sounds good, and seems to be about what we've been asking for.

Following this meeting of the organization commanders, General Andrews and his party were escorted to an observation tower on the shore of San Pablo Bay by Lieut.-Colonel Tinker. Here an exhibition of high altitude bombing was conducted by the 11th Bombardment Squadron. Two flights of three Martin Bombers took off from Hamilton Field at 9:45 a.m. Each plane carried three 300-lb. bombs loaded with sand and four pounds of black powder. The planes climbed rapidly to 18,000 feet, and promptly at 10:30 a.m., the first flight of three planes passed over the water target and dropped its salvo of nine bombs in train with a perfect hit and dispersion, not one of the bombs falling more than 200 feet from the center of the target, and four bombs making direct hits.

Two minutes later, the second flight made its first approach. A flight salvo of three bombs was dropped and landed about 750 feet to the right of the target. On the second salvo, the center of impact was 250 feet right of the target, and on the last approach a direct hit was made on the target with the entire salvo.

On each approach only the bomb sight in the lead ship of each flight was operated, the wing men releasing bombs upon release of the leading plane. Capt. M.L. Harding was the bombardier in the first flight. Lieut. H.R. Volin bombed for the second flight.

General Andrews expressed himself as very well pleased with the exhibition of high altitude bombing, and this was gratifying, for we of the 7th Bombardment Group can well appreciate words of respect relative to our bombing after the interest and enthusiasm we have put into this last intensive year of training.

It was with deep regret that later on this same Monday morning we should see General Andrews and his party leave Hamilton Field with Dayton, Ohio, as his destination. It was a pleasant week end, and we hope he comes again soon."

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TESTING APPARATUS GOES TO MEDICAL MEET

The testing equipment used at the School of Aviation Medicine at Randolph Field, Texas, was demonstrated during the week of May 14th in Kansas City, Mo., at the annual convention of the American Medical Association. Captain John M. Hargreaves, Flight Surgeon, made the demonstration. Captain Hargreaves and the equipment were flown to Kansas City in an Army transport piloted by Staff Sgt. T.K. Dorsett, of the 3rd Transport Squadron, Duncan Field, San Antonio, Texas.

The apparatus included a combination setup of blind flying instruments which were perfected by Major W.C. Ocker, of Brooks Field; time reaction indicator; a depth perception instrument for testing the eyes of prospective pilots and the wobble meter used in testing the fatigue of the applicants for flying training.

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REUNION OF THE 141ST AERO SQUADRON

Members of the 141st Aero Squadron (Pursuit) a World War organization, are asked by Master Sergeant John Nelmar, of the 19th Bombardment Group Headquarters Detachment, March Field, Calif., to come to the Squadron Reunion at Dallas, Texas, on Labor Day. He states that war time members of the unit should advise Mr. Arthur D. Dodds, of Dallas, Texas, of their intentions concerning the meeting. If the ex-members are not able to come, he still wants to hear from them. Nelmar believes that the only other member still in active service is Master Sgt. William Pulliam, A.C.,

Sergeant Nelmar states that the 141st was stationed in the Toul Sector during the war, taking part in several major engagements. Before the Squadron went into action, Sgt. Nelmar was transferred to the Intelligence Service as interpreter. He speaks Russian, Belgian and German. He was born in Finland when it was part of the Russian Empire. He traveled extensively as a seaman before entering the U.S. Army 20 years ago. He is now on duty with the 19th Bombardment Group as a technical inspector. During the World War he held the grade of Sergeant, 1st Class.

ACTIVITIES OF THE FIFTEENTH OBSERVATION SQUADRON

A NUMBER of officers and enlisted men of the 15th Observation Squadron, Scott Field, Belleville, Ill., are carrying out cooperative missions with other branches of the Regular Army. Of the six missions recently assigned to the organization, three have been completed, two are now in progress and the last is scheduled to commence June 7th.

These cooperative missions are of two kinds, one being radio communication with ground troops and the other towing targets for the machine gun and anti-aircraft batteries.

In the radio communications mission with the Cavalry School at Fort Riley, Kansas, Captain Leslie P. Holcomb and 2nd Lieut. Graeme Bond, with two enlisted radio men, flew two observation planes and acted as aerial scouts for the opposing Cavalry units in the mimic war. The pilots radioed information concerning the whereabouts of the "enemy" to the "friendly" radio ground station. This mission was completed in two 3-day periods, May 14th-16th and May 21st-23rd. The third scheduled mission of this type with the Cavalry School will be for a 15-day period, June 7th-23rd, with four pilots, four observers and eight radio and engine mechanics participating.

One officer, 2nd Lieut. Jack S. Hunt, and five enlisted men were at Fort Knox, Ky., May 1st-June 1st, towing 15-foot aerial targets for the 1st Mechanized Cavalry's .50 caliber machine gun anti-aircraft target practice.

An airplane with a red stocking-type target trailing 2,500 feet behind the plane is flown at an altitude of 500 feet above the machine guns and at a speed of approximately 100 miles an hour. In the air, this tow target, which is three feet in diameter, presents an area equal in size to the fuselage of the Observation airplane.

On May 23rd, Major Wm. C. Goldsborough, Commanding Officer of the 15th Observation Squadron, completed a five-day tow target mission with the .50 caliber machine gun units of the 61st Coast Artillery (Anti-Aircraft) at Fort Sheridan, Illinois, their home station.

The tow target used for the three-inch anti-aircraft guns is the same type as that used with the machine guns, but it is approximately 30 feet long. This tow target is flown at an altitude of from 3,000 to 5,000 feet, depending upon the special instructions given to the airplane pilot. At night a white tow target is used. And in night practice, the anti-aircraft gunners use sound detectors, powerful searchlights and tracer bullets.

On May 26th, First Lieutenants Andrew Meulenberg and James F. Walsh and four enlisted men left Scott Field to join the 61st Coast Artillery for a 23-day tow target mission at Manitowoc, Wisconsin. The officers will pilot airplanes both during the day and night in towing aerial targets for the three-inch anti-aircraft gun batteries.

Later on this summer, the entire 15th Observation Squadron is scheduled to go to on extensive maneuvers with the Second Army at Camp Custer, Michigan. The officers and enlisted men will work under simulated war conditions.

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THE GOLDEN GATE BRIDGE - "CRISSY FIELD'S OWN."

By the Crissy Field Correspondent

In the near future Crissy Field will have the distinction of being located practically under the world's longest suspension bridge. The new bridge across the Golden Gate will be directly west of the field, but the ramp leading to the bridge passes so close to the back of Crissy Field barracks that, when completed, life at Crissy will assume very much the aspect of that in the regions near the New York "L."

"Our Bridge" is rapidly becoming a common expression at Crissy Field since the advent of the new Golden Gate Bridge. This span, when completed, will be one of the wonders of the world, and its steady growth has been a source of interest and pleasure to the personnel of the Presidio of San Francisco, and especially Crissy Field. The following pertinent facts pertaining to this immense structure will give the reader some idea of its size.

The Golden Gate Bridge is the longest and highest single span suspension bridge in the world. It will be 4200 feet across the main span, and from actual end to end it extends approximately 9,000 feet. The George Washington Bridge in New York City is approximately 5700 feet long, while the famous Brooklyn Bridge is only 4,000 feet, and its longest span only about 1,500 feet.

The Golden Gate Bridge has two supporting towers, each rising 746 feet above the water - 191 feet higher than the Washington Monument. The famous Eiffel Tower in Paris exceeds this height by 239 feet.

Concrete used in building the Golden Gate Bridge equals the displacement of ten first-line battleships of 33,000 tons each. This amount of concrete would build two 10-foot sidewalks on either side of the highway from Omaha to Chicago.

The 100,000 tons of steel required

to build this bridge would fully load a freight train 20 miles long, and if all the rivets needed for construction were placed head to toe they would form an enormous serpent, 36 miles in length. The rivets used in the main structure average 5 inches in length and are fabricated from specially treated steel to meet the exacting requirements of the bridge engineers.

The lumber used during this construction is sufficient to build a village of 78 modern five-room bungalows.

The two 36½-inch cables of the Golden Gate Bridge required 80,000 miles of wire. This amount would be sufficient to erect a standard wire fence six feet in height on both sides of the main highway from Canada to the Mexican Border, a distance of 1600 miles. If this wire could be connected up in a single length, it would encircle the earth three and one-half times.

Excavations, principally of rock, are among the many important items in the building of this bridge. The total amount of material involved is 553,000 cubic yards. This would equal the material removed in digging a hole in the earth 10 feet square and 25 miles deep.

This bridge will cost $35,000,000 and, according to present plans, will be completed in May, 1937.

The approach leading to this bridge passes within about 20 feet of the roof of the Crissy Field barracks, and when completed this place will seem like living next to a New York "L." The bridge proper cuts across the end of Crissy Field at right angles. Thus, the western end of the field lies directly in the angle of the bridge. The approach ramp runs parallel to and along the entire length of the field.

Not infrequently the tops of the towers are obscured by low clouds, and equally often, when fog covers the waters of the Golden Gate, these towers, viewed from the hill above Crissy Field, can be seen extending above the fog bank.

At night the bridge presents a fantastic sight. The towers and spans, as well as many lines and wires hanging therefrom, are illuminated by hundreds of electric lights, probably half of them red warning lights, giving the whole structure the appearance of a carnival midway.

San Francisco is also building another bridge, longer overall but shorter in spans than the Golden Gate Bridge but, due to the proximity of Crissy Field to the Golden Gate, "Our Bridge" is our own pride and joy, and we are justly proud to tell others about it.

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Hon. Harry H. Woodring, the Assistant Secretary of War, visited Scott Field, Belleville, Ill., for refueling purposes on May 21st, 24th and 28th.

RESCUE MISSIONS BY SELFRIDGE FIELD PILOTS

On May 27th, Selfridge Field was called on by the Coast Guard authorities from Grosse Ile Village, requesting assistance in searching Lake St. Clair for a lost boat with five men on board. First Lieut. Paul W. Blanchard, Jr., took off to search for the missing boat. After about an hour's search, he located the boat upturned, with one man still alive clinging to it and waving to him. Lieut. Blanchard immediately notified the nearest shore station, and a boat was sent out to pick up the lone survivor.

At 11:00 p.m., May 28th, assistance was requested by authorities from Grosse Ile in the search for two men on board a Chris-Craft boat which was missing. Captain Murray C. Woodbury took off at 1:15 a.m., May 29th, to search for the Chris-Craft. After a half hour's search, he had to return to the home airdrome, as it was still too dark to locate the missing boat. He took off again later and, by dropping flares, finally sighted the Chris-Craft at 4:00 a.m., with no one aboard, traveling in circles at full throttle. No trace was found of the two men who had been aboard.

These missions were accomplished by Station Complement personnel under the command of Major Fred C. Nelson while the 1st Pursuit Group was absent from the station on field exercises. The airplanes used were two BT-2B's, there remaining only three planes at the station with the 1st Pursuit Group gone.

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SWIMMING POOL FOR BOLLING FIELD

The progress of construction of an emergency fire reservoir near the gymnasium at the New Bolling Field is being observed almost daily by many enlisted men of that station, and its completion is keenly anticipated. The reservoir's possibilities as a swimming pool are becoming more and more evident to those who have visions of a cool splash on a hot summer day. Since swimming pools in the District of Columbia are usually overcrowded, and the nearest open beaches are at an inconvenient distance, such a construction is a most welcome sight. Its completion is expected about the middle of July, and its size, 100 feet by 40 feet by 12 feet, coincides favorably with the dimensions of a good swimming pool.

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CONGRESSMEN FLY TO INSPECT MAXWELL FIELD

On May 30th, Hon. John J. McSwain, accompanied by members of the House Military Affairs Committee, Major Charles S. Bruce, and Capts. H.R. Baxter and J.W. Persons, Air Corps, as pilot and co-pilot, departed for Maxwell Field, Ala., in one of Bolling Field's new Douglas Transports which is at present assigned to the Office of the Assi tant Secretary of War. The Congressmen inspected Maxwell Field and returned May 31st.

NIGHT FLYING BY THE 7TH BOMBARDMENT GROUP

By the Hamilton Field Correspondent

THE problem of locating and bombing objectives at night furnishes a wide field for experiment, and in this connection the squadrons of the 7th Bombardment Group, Hamilton Field, Calif., have conducted several interesting problems recently. Weather conditions have been generally favorable for night flying here. Often the Pacific fog rolls in through the Golden Gate and covers most of the bay region and coast towns, but frequently leaves Hamilton Field open. Night missions can be flown above the layer of fog, and the lights of towns show through well enough so that navigation is not difficult.

A most interesting night flying problem was recently conducted by the 11th Bombardment Squadron. Leaving Hamilton Field at 7:30 p.m., with seven B-10B's and one B-12A, the Squadron formation proceeded to March Field, via Los Angeles. After servicing the airplanes, officers and men went in search of coffee and sandwiches and a place to rest for a few hours. At 1:50 a.m.,the Squadron took off from March Field for Hamilton. Its mission was to bomb the water target at Hamilton Field at dawn from 10,000 feet, dropping one bomb from each airplane in squadron salvo.

Major C.H. Ridenour led the Squadron from March Field to Hamilton Field by dead reckoning, flying by instrument under the hood. The B-12A had some difficulty in keeping up, but managed to rejoin the formation just as it arrived at Hamilton Field. Some of the tactical value of the problem was lost due to inaccurate information on the time at which the target would be visible from 10,000 feet. As it was, the Squadron arrived at Hamilton Field approximately ten minutes before the target could be seen, and it was necessary to circle the vicinity of the target for that time. The Squadron gave a good account of itself, however, when the target became visible. Its seven bombs bracketed the target.

The 11th Bombardment Squadron has also done considerable experimenting in the use of the bomb sight at night. Using a bonfire as a target, it was found that good bombing could be done up to 14,000 feet and possibly much higher. This bonfire represents C.N. incendiary bombs dropped on a target at night by Observation Aviation to provide an aiming point for the bombardiers of a Bombardment unit approaching the target. At that altitude the experiment was discontinued because of clouds.

Another experiment was the illumination of the water targets by means of M-8 airways flares. The flares were first dropped from 2500 feet and later from 2000 feet. Three airplanes made bombing runs simultaneously - one at 5,000 feet, one at 7,000 feet and one at 10,000 feet. The results were not satisfactory at the two higher altitudes, but it was possible to see the target from 5,000 feet. On this problem several different colors of filters were used over the bombers' windows to eliminate glare, but it was found that they reduced visibility of these low candle-power M-8 flares to such an extent that better results could be obtained without filtering.

All squadrons have conducted problems using flares over the objectives to guide the Bombers on simulated bombing attacks on cities and water reservoirs. On one such problem the objective was Calaveras Reservoir, about 15 miles northeast of San Jose. The ship dropping the flares fell out of formation on the way to the squadron initial point, which was San Simeon. The first flare was dropped when the formation reached the initial point, and two more were dropped at intervals of 15 minutes. The flares dropped on this mission were easily visible for 100 miles.

These experiments have shown that night bombing still presents difficulties. However, they have been very interesting, and it is believed training and experimentation will overcome these difficulties.

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MANEUVERS FOR FLIGHT "D," 16th OBS. SQDN.

"The annual spring maneuvers have started and we gladly welcome them," says the Correspondent of Flight "D," 16th Observation Squadron, Marshall Field, Fort Riley, Kansas. "Two airplanes were sent from Scott Field for cooperation with said maneuvers on May 15th and 16th. Both animal and motorized troops participated in the maneuvers,and the planes performed day and night reconnaissance missions.

"With respect to our equipment, all functioned satisfactorily except that we experienced difficulty in maintaining CW code communication. The two transmitters used were purchased as experimental equipment and were rejected for service use. The calibration oscillator, type RE-12, was tuning too sharply to stay in proper tune with the set in the Cavalry scout car. The observer kept himself quite busy, with one hand on the oscillator dial and the other writing on message pad, marking papers, arranging drop message bags, and still trying to keep his position in the cockpit. Some doubt may exist as to the capabilities of our observers. However, we might quote the old adage - 'Practice makes perfect.' Notwithstanding the aforementioned handicaps, a good time was had by all. A two-day maneuver is now in progress and a real war, lasting from the fifth to the twenty-eighth is scheduled in June. Four planes will be sent from Scott Field to participate in the latter maneuvers.

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RANDOLPH OFFICERS TO GO TO SCHOOLS

Of 17 Randolph Field officers who recently received orders transferring them to Army Service Schools, 14 are veterans who have been stationed at the post since the opening of the field in 1931. Those under orders for change of station who have been at Randolph Field since it was opened are -

Major Paul L. Williams, A.C.T.C.
Major E.D. Jones, Engineering Officer.
Major Bob Nowland, Primary Stage Commander.
Major James D. Givens, Basic Stage Commander.
Captain James M. Bevans, Training Center Adjutant.
Captain Harold A. Bartron, Commanding Officer, 47th School Squadron.
Captain Francis P. Booker, Commanding Officer, 52nd School Squadron.
Captain John F. McBlain, "B" Flight Commander, Basic Stage.
Captain Edmund C. Lynch, Post Operations Officer.
Captain David M. Schlatter, Flying Instructor.
Captain John R. Hawkins, Flying Instructor.
1st Lieut. Tom W. Scott, Flying Instructor.

All of these officers, except Lieut. Scott, have been ordered to the Air Corps Tactical School at Maxwell Field, Ala. Lieut. Scott was ordered to the Air Corps Technical School at Chanute Field, Rantoul, Ill.

Other Randolph Field officers under orders to attend Army Service Schools are Lieut.-Colonel Lloyd N. Keesling, Assistant Commandant of the Air Corps Primary Flying School, who goes to the Tactical School; Captain John M. Weikert, Commandant of Cadets, who is ordered to the Command and General Staff School, Fort Leavenworth, Kansas; and Major Myron R. Wood, Commanding Officer of the 67th Service Squadron, who has been ordered to the Army Industrial College, Washington, D.C.

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37TH ATTACKERS STAGE DEMONSTRATION

In the periodical attack demonstration for the graduating classes of the Chemical Warfare School at Edgewood Arsenal, Md., recently, six A-8 Attack planes from the 37th Attack Squadron, GHQ Air Force, Langley Field, Va., participated in the exercises, the greater part of the day being required to go through their various evolutions.

The students obtained first hand experience in employing of smoke and the advantage of single and collective screening, patching of moving clouds by additional planes, the blending of smoke from more than one airplane and the effect of terrain contours on the dispersing actions of up-drafts in wooded areas. A taste of actual conditions was injected into the proceedings when the class was isolated by a dense cloud obscuring their simulated targets and obscuring their movements while approaching to their advance positions.

The high light of the day's activity was the neutralizing of anti-aircraft batteries by completely obscuring their implacement, which reduced to a minimum their effectiveness both in lateral and vertical fields of fire. This effective rolling cloud was laid by a flight of six ships flying in echelon and simultaneously discharging smoke, laying a cloud approximately 1500 yards long.

A few officers of the Arsenal took the opportunity to observe these demonstrations from the air in the various phases.

Two days' demonstration were crowded into one, and this placed a little extra pressure on the ground crews, who answered with a will that terminated the exercises in ample time for the flight, less one airplane (engine trouble) to return to Langley Field, arriving there at 6:00 p.m. An approaching thunderstorm kept the flight on their toes the last half hour of flight, and they just landed under the wire as the storm broke five minutes later.

Participating in these exercises were the following: Pilots - Major Ned Schramm, Captains Wolfinbarger, McLennan, Grussendorf, Lieuts. Zimmerman, Thomas, Cadets Eakin and Willoughby; Mechanics - Staff Sgt. Hays, Sergeants Maginnis, Rogers, and Private Hankey.

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SOLDIER'S MEDAL FOR CORPORAL GILMORE

The Soldier's Medal was recently presented to Corporal Clyde E. Gilmore, 44th Obs. Squadron, Air Corps, Albrook Field, Panama Canal Zone, by Major-General Lytle Brown, Department Commander, "for heroism displayed at Albrook Field, September 30, 1935. Observing a soldier, whose clothing was completely enveloped in flames caused by a sudden gasoline blaze in the hangar of the 44th Observation Squadron, running from the scene of the fire, Corporal Gilmore rushed after him, succeeded in throwing him to the ground and removing his clothing. By his courage and coolness, Corporal Gilmore undoubtedly saved the life of this soldier." Corporal Gilmore was born on April 3, 1904, at Highland, Kansas, and enlisted in the Army at Fort Sam Houston, Tex.

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Second Lieuts. Paul Burlingame, Jr., Infantry; Jerome E. Blair, 2d, Cavalry, and Edward Flanick, Field Art., were transferred to the Air Corps, April 24, 1936, with rank from June 12, 1934.

BIOGRAPHIES

COLONEL FREDERICK L. MARTIN

Colonel Frederick L. Martin, Air Corps, Executive Officer of the Air Corps Materiel Division, Wright Field, Dayton, Ohio, was born November 26,1882, at Washington Grove, Md. After graduating from Purdue University with the degree of B.S. in 1908, he was commissioned on September 25th of that year as a 2nd Lieutenant, Coast Artillery Corps, U.S. Army; was promoted to 1st Lieutenant, March 11, 1911; Captain, July 1, 1916; Major, Signal Corps (temporary), August 5, 1917; Major, Air Service,July 1, 1920, and Lieutenant-Colonel , Air Corps, August 21, 1933.

He graduated from the Coast Artillery School in 1913, and just prior to his detail in the Aviation Section, Signal Corps,and being ordered to duty in the Office of the Chief Signal Officer, Washington, D.C., he was stationed in the Hawaiian Islands. From October 18, 1917, to June 15, 1919, he was in charge of the Materiel Section, Supply Division, Office of the Chief Signal Officer (later under the jurisdiction of the Director of Air Service) except for a period of several months towards the end of the war, when he was on duty overseas. From June 15, 1919, to May 21, 1920, he was on duty in the Engine and Plane Maintenance Section, Supply Group, and Chief of the Buildings and Grounds Section, Office of the Director of Air Service until August 24, 1920, when he was assigned to Langley Field, Va., for duty as Director and Instructor, Department of Military Administration, Field Officers School.

While stationed in Washington, Col. Martin received flying instruction at Bolling Field, D.C., but on December 18, 1920, he started all over again at the Primary Flying School at Carlstrom Field, Arcadia, Fla., completing the course on April 6, 1921, and being transferred to Kelly Field, Texas, for advanced training. Specializing in Bombardment, he completed the advanced course on July 1, 1921, and was then assigned to Chanute Field, Rantoul, Ill., as commanding officer of that field and as Commandant of the Air Service Mechanics School, the present designation of which is the Air Corps Technical School.

It was during Colonel Martin's tour of duty at Chanute Field that he experienced the greatest adventure of his military career. Designated as the leader of the epochal Around-the-World Flight, pioneered by the Army Air Corps, Col. Martin, piloting the Flagship SEATTLE, and being accompanied by Sergeant Alva L. Harvey (now Captain, Air Corps), suffered the misfortune of running into a dense fog shortly after leaving Chignik, Alaska, on the morning of April 30,1924. The fog forced him to fly near the ground. Believing that their greatest safety lay in climbing through the fog, which he felt was purely a local condition, Colonel Martin's progress was very slow, due to the fact that the plane was heavily laden with gasoline and oil. After climbing for several minutes, he caught a glimpse of some bare spots on a mountain,where the snow had blown away, just as the plane crashed. Sergeant Harvey suffered no ill effects from the crash, and Colonel Martin sustained a bruise to his left eye due to the breaking of one of the lens of his goggles, and a cut on his nose. The plane was so badly damaged that further participation in the World Flight was at an end.

For ten days the world had no word as to the fate of the two stranded Army airmen, and it was feared by many that they had come to an untimely end. Then the joyous tidings came from Port Moller that the two airmen had reached the cannery at that point and were being well taken care of. Colonel Martin and Sergeant Harvey suffered many hardships in their ten days' sojourn in the Alaskan wilds. Concentrated food, in liquid form, which was taken along on the flight saved suffering from the ravages of hunger but, despite their heavy flying suits, fleece-lined moccasins, helmets and fur gloves, the intense cold caused them many sleepless hours when they rested from their attempts to reach the Pacific coast line. They made no progress during the first three days, fogs and the rugged mountains blocking their path.

Both men suffered from partial snowblindness, first Sergeant Harvey and then Colonel Martin, It was not until the morning of May 4th, when the fog lifted and they climbed to the top of a mountain and spied a lake to the southwest, that their slow and tedious journey to the coast started. They followed a stream which they discovered near the lake, but the land was very marshy and they had to undergo a drying-out process whenever they made camp for the night. Fortunately, there was enough dead wood lying about to enable them to build a fire when, thoroughly exhausted, they selected a spot to rest.

It was lucky for the two weakened men that they discovered a deserted cabin on the morning of May 6th, and they proceeded to make themselves as comfortable as possible and obtain much needed sleep. Some food was found in the cabin, and the two hungry men were not long in satisfying their appetite. A violent snowstorm which later changed into rain compelled them to remain in the cabin until the morning of May 10th, when they again started forth, much rested and feeling quite strong. It was at 4:00 p.m. that they caught sight of the wireless mast at Port Moller and a little later some natives in a launch on the bay. From then on better days were ahead of them.

Colonel Martin was awarded the Distinguished Service Medal, the citation accompanying same being as follows:

"For exceptional meritorious and distinguished services in a position of great responsibility as commanding officer of the United States Army Air Service Around-the-World Flight and as pilot of Airplane No. 1, the 'Seattle,' from April 6, 1924, until April 30,1924, when, due to an accident which resulted in the complete wreck of his airplane, he was obliged to relinquish command of the Expedition. Major Martin, by his tireless energy, foresight and thorough technical knowledge, assisted materially in completing arrangements and developing the special equipment installed in the airplanes, and so perfected and organized the command that each unit would become self-sustaining and automatic in its operation in the event of separation from or disaster to the others. In the performance of this great task he aided in bringing credit to the military forces of the United States."

Returning to Chanute Field in June, 1924, Colonel Martin remained there until the following October, when he went to Langley Field to pursue the course at the Tactical School. He graduated therefrom in June, 1925; completed the course at the Command and General Staff School, Fort Leavenworth, Kansas, in June, 1926, and then assumed command of Bolling Field, D.C., until April, 1927, when he was assigned to duty in the Office of the Chief of the Air Corps as Chief of the Inspection Division.

Transferred to Kelly Field, Texas, Colonel Martin assumed command of this field and of the Advanced Flying School on August 6, 1930. In September of the following year he assumed command of the Air Corps Primary Flying School at its new location at Randolph Field, Texas. In August, 1934, he began the one-year course of instruction at the Army War College, Washington, D.C., and, following his graduation in June, 1935, was assigned to duty as Executive, Air Corps Materiel Division, Wright Field, Va., and given the temporary rank of Colonel.

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COLONEL DELOS C. EMMONS

Colonel Delos C. Emmons is one of the veteran Army pilots who began his flying training at the Signal Corps Aviation School at San Diego, Calif., prior to the World War. Born in West Virginia, January 17, 1888, he graduated from the United States Military Academy June 11, 1909, and was commissioned a second lieutenant of Infantry. He was promoted to 1st Lieutenant, July 1, 1916; to Captain, May 15, 1917; to Major (temp.), Aviation Section, Signal Corps, June 3, 1918; to Major, Air Service, July 1, 1920, and to Lieut. Colonel, May 26, 1934.

Colonel Emmons served with the Infantry until January 1, 1917, and then began his flying training, which he completed in July, 1917, receiving the rating of Junior Military Aviator on July 26th of that year. His first duty assignment in connection with Army aviation was as Aeronautical Officer of the Western Department, which position he held from July 27,1917, to December 17, 1917, when he reported for duty as Assistant Executive, Air Division, Office of the Chief Signal Officer, Washington, D.C.

On June 15, 1918, Colonel Emmons assumed command of Mather Field, Sacramento, Calif, and in January of the following year he was transferred to the Engineering Division at McCook Field, Dayton, Ohio,as Executive Officer. On December 1, 1919, he became Assistant to the Chief of the Engineering Division.

After attending the Harvard Graduate School of Business Administration from September, 1920, to June, 1921, Colonel Emmons, following his graduation, returned to McCook Field for duty as Chief of the Production Section, and he performed the additional duty of Contracting Officer.

On August 2, 1924, he assumed command of Crissy Field, Presidio of San Francisco, Calif., and of the 91st Observation Squadron at that post. Three years later, on August 8, 1927, he was assigned to duty as Assistant Executive, Office of the Chief of the Air Corps, Washington, D.C. He became Executive Officer some six weeks later, on September 28th. On October 11, 1928, he took over the position of Executive in the Office of the Assistant Secretary of War for Aviation, and he was on duty in this capacity until July 5, 1931.

The next two years in Colonel Emmons' military career were devoted to school duty, first as a student at the Air Corps Tactical School and then at the Command and General Staff School at Fort L'worth, Kansas. Following his graduation from the latter School in June, 1933, he was ordere to duty in the Hawaiian Department.

On March 2, 1935, by virtue of his position as Commanding Officer of the 18th Composite Wing, he was promoted to the temporary rank of Colonel.

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ORDNANCE DEPARTMENT TO HANDLE BOMB SUPPLY

The War Department, on May 24, 1936, authorized the Chief of Ordnance to organize at Mitchel Field, New York, a test platoon of Ordnance personnel to handle the bomb supply of the 9th Bombardment Group at that station. This action is a step in a plan to have the responsibility for bomb supply for active operations in the field taken care of by Ordnance personnel.

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Lieut. Colonel Walter G. Kilner is under orders to proceed to Langley Field, Va., for duty, upon completion of his course of instruction at the Army War College. Capt Odas Moon, of Maxwell Field, is also under orders for duty at Langley Field.

CHANGES OF STATION OF AIR CORPS OFFICERS

Effective July 1, 1936, the following-named Air Corps officers are detailed to take the course of instruction at the California Institute of Technology, Pasadena, Calif.:

Captain Samuel E. Anderson (1st Lieut.) Intelligence and Operations Officer, 43rd Pursuit Squadron, Kelly Field, Texas.

Captain Theodore M. Bolen (1st Lieut.) Engineer Officer, 71st Service Squadron, Barksdale Field, La.

Captain Lawrence H. Douthit (1st Lieut.) Flight Commander, 95th Attack Squadron, March Field, Calif.

1st Lieut. Milton W. Arnold, Engineer Officer, 90th Attack Squadron, Barksdale Field, La.

1st Lieut. Charles K. Moore, upon completion present course of instruction at Air Corps Engineering School, Wright Field, Ohio.

Officers holding temporary increased rank are relieved therefrom July 1, 1936.

The following-named Air Corps officers are detailed for duty as students at the Mass. Institute of Technology, effective July 1, '36:

Captain Robert E. Eaton (1st Lt.) Flight Commander, 5th Bombardment Squadron, Mitchel Field, N.Y.

1st Lieut. Ernest Moore, Engineer Officer, 77th Pursuit Squadron, Barksdale Field, La.

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1st Lieut. Frederick R. Dent, student, Air Corps Engineering School, Wright Field, Ohio, effective July 31, 1936.

Officers holding temporary increased rank are relieved therefrom July 1, 1936.

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Upon completion of his present course of instruction at the Air Corps Engineering School at Wright Field, Dayton, Ohio, 1st Lieut. Edwin S. Perrin, Air Corps, is detailed as student at the University of Michigan, Ann Arbor, Mich.

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Effective July 1, 1936, the following-named Air Corps officers, on duty as students at the Massachusetts Institute of Technology, Cambridge, Mass., are assigned to stations, as follows:

To Mitchel Field, N.Y.: 1st Lieut. Royden E. Beebe, Jr.

To Langley Field, Va.: 1st Lieuts. Julius K. Lacey and Torgils G. Wold.

To Selfridge Field, Mich.: 1st Lieut. Anthony Q. Mustoe.

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The following-named Air Corps officers, upon the completion of their present course of instruction at the Air Corps Technical School, Chanute Field, Rantoul, Ill., are assigned to stations, as follows:

To March Field, Calif.: Captain William O. Eareckson and 1st Lieut. Carl R. Feldmann.

To Hamilton Field, Calif.: 1st Lieuts. Fred S. Stocks, George F. Kinzie, Oliver S. Picher and Louie P. Turner.

To Randolph Field, Texas: 1st Lieuts. Thomas C. Darcy, Joe W. Kelly, Hilbert F. Muenter and George F. Schlatter.

To Kelly Field, Texas: 1st Lieut. John H. Bundy.

To Barksdale Field, La.: 1st Lieuts. Herbert N. Grills, Clark N. Piper and Minthorne W. Reed.

To Langley Field, Va.: 1st Lieut. Edwin L. Tucker.

To Fort Bragg, N.C., for duty with Flight C, 16th Obs. Squadron: 1st Lieuts. Eugene H. Rice and Earl T. MacArthur, Jr.

To Brooks Field, Texas, for duty with 12th Observation Group: 1st Lieuts. Daniel F. Callahan, Jr., Joseph F. Carroll.

To Mitchel Field, N.Y.: 1st Lieuts. Richard H. Wise and Stuart P. Wright for duty with 97th Observation Squadron; William M. Prince, Photo Section Commander.

To Chanute Field: 1st Lieut. Wiley D. Ganey.

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Upon the expiration of their present tour of duty in the Panama Canal Department, the following-named Air Corps officers are assigned to stations, as follows:

To Barksdale Field, La.: Major Orrin L. Grover (1st Lieut.), 74th Pursuit Squadron; 1st Lieut. James W. McCauley.

To Bolling Field, D.C.: Captain William E. Hall (1st Lieut.) Panama Air Depot.

To Hamilton Field, Calif.: Captain Joseph H. Atkinson (1st Lieut.), 29th Pursuit Squadron; Captain Donald W. Benner (1st Lieut.), Panama Air Depot; Captain Elmer P. Rose (1st Lieut.), 6th Composite Group; Captain Ronald R. Walker (1st Lieut.), 74th Pursuit Squadron.

To Langley Field, Va.: Major Frank O'D. Hunter (Capt.) 16th Pursuit Group.

To Selfridge Field, Mich.: 1st Lieut. Edward W. Anderson.

Officers holding temporary increased rank are relieved therefrom upon date of their departure from Panama.

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Effective July 1, 1936, the following-named Air Corps officers are relieved from duty and temporary rank at stations indicated, and will proceed to Randolph Field, Texas, for duty:

Major William A. Hayward (Capt.) from Chanute Field, Ill.

Captains Eugene B. Bayley and Donald B. Phillips, from Air Corps Tactical School, Maxwell Field, Ala.

Captain Dayton D. Watson, from Command and General Staff School, Ft. Leavenworth, Kansas.

Major Carl W. Pyle (Capt.), 76th Service Squadron, March Field, Calif.

Major Walter H. Reid (Capt.), 2nd Wing; Capt. Henry W. Dorr (1st Lt.), 35th Pursuit Squadron; Captain Stoyte O. Ross (1st Lt.), 35th Pursuit Squadron, Langley Field, Va.

Captain Paul M. Jacobs (1st Lt.), 17th Pursuit Squadron; 1st Lieut. Paul W. Blanchard, Selfridge Field, Mich.; 1st L

1st Lieut. Don W. Zimmerman, student, Calif. Institute of Technology, Pasadena, Calif.

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Upon the completion of their present course of instruction at the Air Corps Tactical School at Maxwell Field, Ala.; Captains Samuel M. Connell, Claude E. Duncan and Charles A. Horn are assigned to duty at Mitchel Field; Thad V. Foster and Newton Longfellow to Hamilton Field, and Lewis A. Dayton to Maxwell Field.

DEATH! THEN WHAT!

What is the situation confronting the widow and children of Army officers and enlisted men when the Grim Reaper makes his inevitable call?

Captain J.H. Doherty, Finance Department, in a recent issue of the Coast Artillery Journal, has contributed a most valuable and authoritative article on a subject so seldom discussed that the members of the deceased family are usually left without sufficient information to make a prompt and efficient settlement of his estate. The author of the article goes into considerable detail on the subjects of burial plot; directions for burial; six months gratuity pay; arrears of pay; Army Mutual Aid Association Insurance; U.S. Government Insurance; money in bank; personal property, including stocks and bonds; commercial insurance policies; real estate owned by the deceased; automobile - title insurance and unpaid notes; fire insurance; U.S. pension; marriage certificate; birth certificate; death certificate; household goods; transportation of dependents to home; last will and testament, etc.

The information contained in Captain Doherty's article has been considered of such vital importance as to cause it to be published in pamphlet form, and copies thereof may be had gratis by communicating with Mr. Wadell F. Smith, Washington Building, Washington, D.C.

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MAJOR EAKER MAKES TRANSCONTINENTAL INSTRUMENT FLIGHT

Major Ira C. Eaker, Air Corps, who recently graduated from the Air Corps Tactical School, Maxwell Field, Ala., set his single-seater Army Pursuit plane down at Los Angeles, Calif., on June 7th, after a flight across the continent during which he relied solely on the instruments in the plane, without any outside vision, to guide him to his destination.

Escorted by Major William E. Kepner, Air Corps, also a member of the graduating class of the Tactical School,in another Boeing P-12 Pursuit plane,Major Eaker completed a test flight which began unannounced at Mitchel Field, N.Y., at noon on June 3rd.

By easy stages, owing to the limited gasoline supply of the small Pursuit planes, the two officers flew the 2600 miles of airway, Major Eaker seated in the hooded cockpit of his plane, and Major Kepner serving as convoy to avert any mishaps.

According to Major Eaker, the flight demonstrated the reliability of the instruments and the fact that Army pilots can fly "blind" for long periods without too great fatigue.

There were several times when the escort plane was forced to stay behind the "blind" ship. because of poor visibility, thus placing reliance on the "blind" ship to lead the way, was among the comments made following the successful completion of the flight.

The official report covering this flight has not yet been received.

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FIRST PURSUIT GROUP COMPLETES FIELD EXERCISES

The 1st Pursuit Group, Selfridge Field, Mt. Clemens, Mich., returned from field training the week end of June 6th, having departed from the home station the week of May 18th. Bases were maintained at Midland, Saginaw and Camp Skeel, Oscoda, Michigan, with Group Headquarters at Bay City.

Flying missions were performed daily in that area, with radio contact between ground and air units being maintained at all times. Flights were directed to Camp Skeel for gunnery practice, and on completion of the gunnery missions returned to their bases for servicing. The rough condition and the limited area of the landing field at Oscoda prohibited the landing of the P-26 and PB-2 Pursuit planes at that point with any degree of safety.

During the week end of May 30th, a Group flight was made to Indianapolis, Indiana, as part of the training during the field exercise period.

The personnel of the 1st Pursuit Group received very valuable field training and aerial gunnery practice during this period.

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PB-2 PLANES FERRIED TO SELFRIDGE FIELD

Captain C.J. Kenney departed on June 1st for the Consolidated Aircraft factory at San Diego, Calif., to procure and ferry a new PB-2 Pursuit plane to Selfridge Field. Two other pilots of the 1st Pursuit Group, Majors Edwin J. House and George P. Tourtellot, departed on June 6th for the Consolidated plant to obtain the last two PB-2's of the 26 assigned to Selfridge Field.

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Two Langley Field officers, Major R.T. Cronau (Capt.), 2nd Bomb. Group, and Capt. E.R. Todd (1st Lt.), 96th Bomb. Squadron, are slated for station at Kelly Field on July 1st,and relievedfrom temporary rank.

Washington Office Notes

On June 1st, Major General Oscar Westover, Chief of the Air Corps, accompanied by his crew chief, Sergeant Hymes, left Bolling Field, D.C., in an O-38F airplane for Maxwell Field, Montgomery, Ala., where on the morning of the 2nd he delivered an address to the 1936 graduating class of the Air Corps Tactical School. He returned to Washington that afternoon, covering the distance of approximately 705 miles in schedule time.

On June 10th, General Westover left for West Point, N.Y., to attend the graduation exercises at the U.S. Military Academy.

General Westover qualified as an instrument flyer for another year. On the morning of June 6th, Major William E. Farthing, as instructor, gave the General his yearly check in accordance with the provisions of the Air Corps Circular covering instrument flying for flying personnel of the Air Corps. Last year General Westover qualified in instrument flying with Captain George W. McGregor as instructor.

Brigadier General Henry H. Arnold returned to duty on June 3rd following an inspection trip on the West Coast.

Officers who recently departed on leaves of absence were Captain James C. Cluck, Supply Division, on June 3rd, and Major Robert L. Walsh, Chief of the Reserve Division, on June 10th.

Recent visitors to the Chief's Office were Colonel Ira A. Rader, while en route on a navigation flight to West Point, N.Y.; Capt. Aubrey K. Dodson, on leave from Hamilton Field, Calif.; Captain Leslie P. Holcomb, on leave from Scott Field, Ill.; Major Harry H. Young, during the course of a navigation flight from Fort Leavenworth, Kansas; Captain C.F. Wheeler, from Wright Field, Ohio, for conference with the War Plans and Training Division; Captain James E. Parker, on a navigation flight from Maxwell Field, Ala.; Major Otto G. Trunk, from Langley Field, for conference; and Major Charles H. Howard, also from Langley Field, for conference on radio matters.

Major Ross G. Hoyt, Information Division, returned from temporary duty at Wright Field, May 29th. Other officers returning from that station, where they attended board meetings or were on other temporary duty, were Major Robert Kauch and Captain Harlan W. Holden, War Plans and Training Division, on June 2nd; and Captain Edward V. Harbeck, Inspection Division, on June 9th.

Captain Leland W. Miller reported for duty in the Office of the Chief of the Air Corps on June 4th, and was assigned to the Supply Division.

Captain W.B. Souza returned on June 2nd from an inspection trip in connection with radio matters.

Captain Robert V. Laughlin returned to his duties in the Supply Division on June 10th, following a leave of absence.

Major Arthur E. Easterbrook left the office June 8th on an extended navigation flight.

Captain George Holloman, from the Materiel Division, Wright Field, reported on June 7th for temporary duty.

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ENLISTED MEN APPOINTED FLYING CADETS

The following-named enlisted men, Regular Army, appointed Flying Cadets, Army Air Corps, are under orders to report to the Primary Flying School, Randolph Field, Texas, June 29th, for assignment to the July, 1936, Class:

Privates:

Orville L. Sparks, Station Complement, Bolling Field, D.C.
William E. Basye, Flight A, 16th Observation Squadron, Langley Field, Va.
George A. Blakey, Air Corps Primary Flying School Detachment, Randolph Field, Texas.
Joseph A. Morris, 67th Service Squadron, Randolph Field, Texas.
Theodore A. Suiter, Air Corps Primary Flying School Detachment, Randolph Field, Texas.
Vernon C. Plane, 64th Service Squadron, March Field, Calif.
Thomas L. Butner, Station Dispensary, Bolling Field, D.C.
Ted W. Ballard, Hqrs. Battery, 1st Field Artillery, Fort Sill, Okla.
Arthur W. Kellond, 2nd Signal Co., 2nd Division, Fort Sam Houston, Texas.

It has often been noted that men in various lines of business, trades or professions bear names peculiarly appropriate to their particular calling. In connection with aviation, such names as Byrd, Eagle, Hawks, etc., are quite prominent. If Private Vernon C. Plane successfully completes his course at the Air Corps Training Center - and it is hoped he will - another very appropriate name will be added to the ranks of the flying fraternity.

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Major John P. Richter (Capt.) was relieved from duty with the 3rd Transport Squadron, San Antonio, Texas, and assigned as Engineering Officer of the San Antonio Air Depot, retaining his increased rank.

Effective June 13th, Captain Elmer D. Perrin was assigned to duty as Commanding Officer of the 3rd Transport Squadron, San Antonio, and given the temporary rank of Major.

Effective May 24th, 1st Lieut. John W. Sessums, Jr., was assigned as Flight Commander, 1st Transport Squadron, Fairfield, Ohio, Air Depot, with the temporary rank of Captain.

AIR CORPS OFFICERS GET A TASTE OF LIFE IN THE NAVY

Eight Air Corps officers stationed in the Panama Canal Department recently accompanied the United States Fleet as observers on a six-day problem in Panamanian and South American waters. Their experience with the Fleet is related by the News Letter Correspondent from Albrook Field, Canal Zone, as follows:

From a technical point of view, the cruise was doubly instructive and interesting, as these eight officers were attached to aircraft carriers; Lieut. Colonel C.T. Phillips and Captain W.E. Hall being attached to the U.S.S. SARATOGA: Captains L.W. DeRosier and F.D. Henry to the U.S.S. LANGLEY; Captain T.S. Olds and Lieut. R.B. Landry to the U.S.S. LEXINGTON, and Captain W.J. Davies and Lieut. P.E. Gabel to the U.S.S. RANGER. Several of the officers were permitted to fly as observers during the air operations of the various Scouting, Torpedo and Bombing units. Every consideration and courtesy was extended by the personnel of the various Carriers, including invitations to take an active part in the traditional "Crossing the Line" ceremonies, and each of the officers concerned now proudly boasts the fact that he has joined the ranks of the 'Trusty Shellbacks."

Fortunately for the Army officers accompanying the Fleet, it had been several years since the Naval forces had crossed the equator en masse, with the result that the 'Pollywogs" far outnumbered the "Shellbacks." However, it has been reported that what the "Shellbacks" lacked in numbers was more than compensated for by their experience and enthusiasm. Promptly at eight-thirty on the morning of May 20th, the entire fleet "lay to" for receiving aboard His Majesty, Neptune Rex, in compliance with instructions personally delivered to the captain of each ship the previous evening by Davey Jones, Scribe and Secretary to His Majesty. The Ruler of the Raging Main was accompanied by his court, consisting of the Royal Consorts, the Royal Baby, the Royal Judges, the Royal Doctor and Dentist, the Royal Cops, the Royal Chaplain, the Royal Prosecutor, and last, but decidedly the most active, the members of the order of "Trusty Shellbacks." Each 'Pollywog" was arraigned and given a fair and impartial trial, but the cases against the hapless 'Pollywogs" were presented by the Royal Prosecutor in such a convincing manner that a verdict of guilty was returned in each instance, whereupon the victims were given the 'Royal Works." It is the opinion of the Army pilots that even in this ceremony they were given special consideration; in fact, in some cases the consideration was so special that certain parts of the anatomies concerned still bear the marks of fair wear and tear received in the public service. However, all hands survived, and they look back with pleasure upon the experience of the cruise and anticipate with evil joy their next participation in "Crossing the Line " ceremonies, as they have been thoroughly convinced that it is much more pleasant to give than to receive.

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THE BLUE AND GOLD CLUB OF LUKE FIELD

The Air Corps needs mentally alert soldiers. Flying demands mental agility even more than physical fitness. The Blue and Gold Club of Luke Field, T.H., a society with a background of religion, education and social contact, cultivates mental alertness in the soldier in two ways. First of all, it brings to the members each Sunday evening guest speakers from Honolulu and Army and Navy circles who are specialists in their avocations. Journalists professors, Army and Navy officials, and successful business men have lectured with telling effect to the members of the Blue and Gold Club, furnishing them with models of correct public speaking and with ideas which increase knowledge and mental alertness.

It likewise develops the soldier in his ability to express himself. In this organization in which the enlisted men constitute the majority of membership, parliamentary practice governs all business at each meeting. Thus, each member has the right to discuss all questions before the body. Hence he learns quickly to talk and think in public. The club is self-governing, electing its own officers who direct the affairs of the society. The Chaplain acts as censor and critic. From 50 to 150 soldiers attend and enjoy the talks and the business discussions each Sunday evening at 5:45 p.m. in the post chapel at Luke Field.

Named after the official colors of the Air Corps, the Blue and Gold Club has obtained the best talent in the islands for its guest speakers. The club also acts as a nucleus for the formation of subsidiary clubs, among which are a bridge, camera, chess, dramatic, stamp, tourist and the Ballentine Bible Class, named after former Chaplain Harlan T. Ballentine, and taught by the man succeeding him at Luke Field, Chaplain Milton O. Beebe.

It is believed the success of this Club at Luke Field would justify a similar organization at each Air Corps flying field, and that membership in the Blue and Gold Club could be carried from one Air Corps station to another upon the transfer of the soldier.

The Department Commander, Major General Hugh A. Drum, has consented to be the guest speaker of the Luke Field Air Corps Club on September 6th, next. Captain Howard B. Nurse, Constructing Quartermaster at Hickam Field, recently detailed the salient features of the $15 000,000 flying field which is springing up under his guidance. High school education in Honolulu, with its racial problems, were shown to the Luke Fielders by the acting principal of the McKinley High School, Mr. Carter, and Mrs. Livingston Jenks, of the Honolulu Academy of Arts, arranged for a lecture before the organization on 'Primitive and Modern Hawaiian Art."

The club has sponsored a number of recreational outings at beautiful Hawaiian beaches and acted as hosts to departing soldiers sailing for the mainland.

AIR CORPS NEWS LETTER

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VOL. XIX **Air Corps News Letter** NO. 13

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The Chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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STRATOSPHERE FLYERS AWARDED THE MACKAY TROPHY

Through one of those strange coincidences which happen now and then, Tuesday, June 23rd, 1936, marked the twenty-third annual award of the Mackay Trophy, which is presented to Air Corps officers for each year's most outstanding flight achievement. This Trophy, a gift to the War Department in 1912 by Mr. Clarence H. Mackay, was presented to Major Albert W. Stevens and Captain Orvil A. Anderson, Air Corps, in recognition of their stratosphere flight achievement on November 11, 1935, when they reached an altitude of 72,395 feet. The presentation of the Trophy to the two intrepid aeronauts, who reached the highest altitude ever attained by man, was made by Major General Oscar Westover, Chief of the Air Corps, at the headquarters of the National Geographic Society in Washington, before a gathering of aviation leaders and heads of the Society.

Mr. Charles S. Horner, President of the National Aeronautic Association, which is the custodian of the Mackay Trophy, turned it over to General Westover for presentation.

In being selected for the 1935 award, Major Stevens became a "repeater" among the worthy company of holders of the Mackay Trophy who in past years attained this distinction, namely, Brigadier General Henry H. Arnold, Majors Lowell H. Smith, Oakley G. Kelly, John A. Macready (Air Reserve), and Erik H. Nelson (Specialist Reserve).

When they were first lieutenants in the Air Service, the flying team of Kelly and Macready won the Mackay Trophy for three consecutive years; in 1921 for their record-breaking altitude flight; in 1922 for their record-breaking duration flight, and in 1923 for their nonstop flight across the American continent. Major Stevens won the Trophy the first time in 1929 for his remarkable long-distance and high altitude photographic flights.

While it is only fitting and proper that outstanding flight performances should receive suitable recognition, the annual award of the Mackay Trophy serves the double purpose of keeping these exploits fresh in our memory. The history of the Mackay Trophy is closely interwoven with the progress aviation has made within the past quarter of a century and brings to mind the pioneering flight achievements of the Air Corps which paved the way for even greater accomplishments by military as well as civilian airmen.

General Arnold, Assistant Chief of the Air Corps, the first winner of the Mackay Trophy, was present at the Geographic Society headquarters to welcome Major Stevens and Captain Anderson into the fraternity of Trophy winners, also to "sign up" the first-named officer as a member of the select circle of "Repeaters."

On October 9, 1912, General Arnold, then a second lieutenant, made a 41-minute reconnaissance flight in the early Wright biplane, powered with a 40 h.p. engine, from College Park, Md., then the location of the Signal Corps Aviation School, over the triangle Washington Barracks, D.C., Fort Myer, Va., and return to College Park. In accepting the Mackay Trophy last year, awarded him in recognition of his leadership of the flight of ten B-10 Martin Bombers from Washington, D.C., to Fairbanks, Alaska, and return, involving a total estimated distance of 8,290 miles, General Arnold asserted, in effect, that piloting the Martin Bomber to Alaska was child's play compared with his first Trophy-winning flight, when, due to gusty weather conditions which forced him to center all his attention to controlling the frail craft, his condition at the conclusion of the flight bore all the earmarks of physical exhaustion and nervousness.

Since the flight to Akaska is mentioned, we are reminded that Captain St. Clair Streett (now Major), leader of the Air Corps flight of four DH airplanes from New York to Nome, Alaska, and return, shared in the 1920 award of the Mackay Trophy with the other members of the flight, namely, Lieuts. Clifford C. Nutt, Erik H. Nelson, C.E. Crumrine, Ross C. Kirkpatrick, Sgts. Edmond Henriques, Albert R. Vierra and Joseph E. English. The DH was considered to be a pretty good ship - in those days.

Back in October, 1919, the Transcontinental Reliability Test Flight, sponsored by the Air Corps, occasioned considerable interest throughout the nation, and the Mackay Trophy award for that year went to Lieut.-Colonel Harold E. Hartney, Captains Lowell H. Smith, John O. Donaldson, Felix

Steinle, Lieuts. Belvin W. Maynard, Alexander Pearson, R.S. Worthington, E.M. Manzelman, R.G. Bagby, and D.B. Gish, for achieving the best flight records between the Atlantic and Pacific coasts. No one mentions transcontinental flights these days. They are an every day occurrence.

Flights sponsored by the Air Corps during the years 1924, 1926 and 1927, and which occasioned the award of the Mackay Trophy to the participating personnel, aided greatly in directing attention to the possibilities of the airplane as a reliable means of transportation over long distances. Personnel of the Air Corps Around-the-World Flight who shared with the leader, Major Lowell H. Smith (then 1st Lieutenant) in the 1924 award of the Mackay Trophy were Lieuts. Erik H. Nelson, Leslie P.Arnold, Leigh Wade, John Harding and Henry H. Ogden.

The Pan-American Flight around South America, started in December, 1926, was participated in by Major Herbert A. Dargue (Commander), Captains A.B. McDaniel, Ira C. Eaker, C.F. Woolsey, 1st Lieuts. B.S. Thompson, Muir S. Fairchild, Ennis C. Whitehead and John W. Benton.

The non-stop flight from Oakland, Calif., to Honolulu, T.H., in May,1927, by Captains Lester J. Maitland, pilot, and Albert F. Hegenberger, co-pilot and navigator, was the incentive for a number of similar attempts to span the 2400 miles over the Pacific between the mainland and Hawaii on the part of other intrepid airmen. Unfortunately some of these attempts ended disastrously. Nowadays, nine years later, Clipper ships make Hawaii their first stop on regular scheduled flights to the Asiatic mainland, and news of these flights does not even appear on the inside pages of the daily papers.

Lieut. James H. Doolittle (now major, Air Reserve) shared with the late Lieut. Cyrus Bettis the award of the Mackay Trophy for 1925. The last-named officer established a record of 248.976 miles per hour over a closed circuit in the Pulitzer Trophy Race, while Major Doolittle, using the same airplane,save for the substitution of pontoons for the landing wheels, established a new speed record for seaplanes in the Schneider Trophy Race by averaging a speed of 232.575 miles per hour. Since that year there began a decided upward trend in aircraft speed, particularly with reference to seaplanes, with Italy and Great Britain striving mightily to outdo one another in that phase of aeronautical endeavor. The Schneider Trophy Race is but a memory in the annals of aircraft racing competions, as Great Britain won permanent possession of this Trophy. Notwithstanding this fact, however, the Italian pilot Francesco Agello today holds the world's record for seaplane speed with an average of 423 m.p.h. over a 3-kilometer course. And so the record of today is commonplace tomorrow.

Air Corps officers still in the service who won the Mackay Trophy are Lieut. Colonels Byron Q. Jones, Shepler W. FitzGerald, Ralph Royce, Majors Charles H. Howard and Westside T. Larsen. Colonel Jones, in 1915, established an American duration record through a solo flight of 8 hours and 53 minutes. Col. FitzGerald shared the 1914 award with the late Capt. Townsend F. Dodd for a reconnaissance flight over San Diego, Calif. Col. Royce led the mid-winter flight of the First Pursuit Group from Selfridge Field, Mt. Clemens, Mich., to Spokane, Washington, and return, in 1930, under most adverse weather conditions. Major Howard commanded the Navajo Indian Relief Flight in 1932, when eight bombing planes of the 11th Bombardment Squadron were flown over dangerous mountain and canyon regions for nearly a week in order to drop food over various villages inhabited by the Navajos, who suffered hunger and other privations through being isolated from surrounding communities as a result of an unusually severe and prolonged snowstorm. Major Larsen, in 1933, performed noteworthy pioneering flights in connection with the development of methods of procedure of Aerial Frontier Defense, these flights involving instrument take-offs and landings on both land and water, proceeding to designated points at sea and returning therefrom under instrument flying conditions.

Major General Benjamin D. Foulois, U.S.A., Retired, former Chief of the Air Corps, received the award for 1931 for his flight leadership during the Air Corps maneuvers that year, which constituted the largest concentration of airplanes flying in military formation in the history of the Air Corps.

Lieut. Harry A. Sutton (now Major, Specialist Reserve) won the 1928 award for conducting extremely hazardous spinning tests, and in 1913 two "Early Birds" in aviation, 2nd Lieuts. Joseph E. Carberry and Fred Seydel received the award for a reconnaissance flight over San Diego, Calif.

General Westover's presentation address upon the occasion of the award of the Mackay Trophy, was, in substance, as follows:

The inability of the Secretary and Assistant Secretary of War, and the Chief and Deputy Chief of Staff to be present on this occasion has resulted in my being designated to represent the War Department. Because of my special interest in the flight for which this award is being made and also in the officers who made the flight, I am happy to have this opportunity.

The War Department, and particularly the officers of the Air Corps, feel most fortunate that Mr. Mackay saw fit to donate this beautiful and inspiring Trophy to them. To be deemed worthy of receiving an award of the Mackay Trophy is an honor which may well spur all Air Corps officers to highest endeavor.

It is especially fitting that we should be enjoying today the hospitality of the National Geographic Society, as this organization made possible the flight for which this award is being made. The Air Corps' association with the National Geographic Society in this enterprise has been a profitable and pleasurable experience for all of us.

Mr. Mackay has reposed in the War Department the determination each year of the most meritorious flight eligible for the award of the Mackay Trophy. The meticulous care which the War Department has exercised each year in determining this award has resulted in making the history of the consecutive achievements, for which the Trophy has been awarded, an excellent barometer of aviation's progress. Illustrative of this fact are the first and second awards of this Trophy to Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps. The first award was made in 1912 to General Arnold, then 2nd Lieutenant, for a reconnaissance flight of approximately 20 miles and lasting 41 minutes. The accomplishment on this flight was a report that a platoon of Cavalry and three escort wagons were in movement on a certain road. For the year 1934 the award to General Arnold was for his remarkable flight to Alaska, in which he commanded a force of ten dual-engined bombardment airplanes, all of which flew from Bolling Field to the fartherest reaches of Alaska and return, covering a total distance in excess of 8,000 miles, mapping 35,000 square miles, and making one non-stop flight, mostly over water, of 950 miles.

This year, for the second consecutive year, we have a two-time winner of the Mackay Trophy. Major Stevens received this Trophy in 1929 for an altitude flight in an airplane, during which a height of 35,611 feet was attained.

Ever since its inception the personnel of the Air Corps have been striving to reach higher and ever higher altitudes. This has been not so much for the purpose of making altitude records as to secure information which would be of value in man's further conquest of the air. It was principally with this purpose in mind that the altitude flight of the Explorer II was undertaken on Armistice Day 1935. This flight resulted in a new world's altitude record for manned aircraft of 72,395 feet, and in securing an infinite variety of technical information, the evaluation of which has not yet been completed.

The whole service of Major Stevens and Captain Anderson has been a continuous preparation for the accomplishment of the achievement for which they are today being honored. It is an especial pleasure, therefore, to present these awards, since they are, in a sense, not only a recognition of their achievement of last Armistice Day but also of their whole service.

It gives me great pleasure, Major Stevens, to bestow upon you this award for the outstanding flight of the year by a member of the Air Corps. This award is made to you for your flight as Commander of the Explorer II on Armistice Day, 1935.

Captain Anderson, to you for your splendid airmanship in piloting the Explorer II to the greatest altitude ever reached by man and safely returning the balloon to earth with its valuable cargo of technical information, is awarded, jointly with Captain Stevens, the Mackay Trophy for 1935. It gives me great pleasure to bestow upon you this medal emnlematic of the Award.

The photograph on the cover of this issue of the News Letter, taken at the time of the award of the Mackay Trophy, shows, left to right, Captain Orvil A. Anderson; Mr. Charles F. Horner, President of the National Aeronautic Association; Major Albert W. Stevens; Major General Westover; Dr. John Oliver La Gorce, Vice President of the National Geographic Society, and Dr. Gilbert Grosvernor, President of the National Geographic Society.

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NATIONAL BALLOON RACE STARTS FROM DENVER

Two Scott Field officers, Captain Haynie McCormick, as pilot, and 1st Lieut. John A. Tarro, as aide, have been selected to fly the Army balloon in the National Balloon Race at Denver, Colorado, on July 3, 1936.

The Army Air Corps entry, a 35,000 cubic foot hydrogen inflated balloon of standard single-ply type, will compete with five other entries, including two Navy and three civilian balloons, for the Litchfield Trophy and prize money ranging from $500 to the winner to $200 to the pilot taking fifth place. The entries placing first, second and third will be nominated to represent the United States in the Gordon Bennett International Balloon Race to be held August 30th at Warsaw, Poland.

In the National Balloon Race, sponsored this year by the Denver Mile High Air Races Association, which is holding a 3-day air meet, the balloon race will be the first major event to take place. The six entries are: No. 1, Army Air Corps, Capt. McCormick and Lieut. Tarro; No. 2, U.S.

(Continued on Page 20)

AIR SWINGING OF AN AIRPLANE COMPASS

Captain Norris B. Harbold, 30th Bombardment Squadron, GHQ Air Force, March Field, Riverside, Calif., submits a discussion of and procedure developed by the 19th Bombardment Group for air swinging of an airplane compass. Captain Harbold states that air swinging was found necessary for B-10 airplanes and that the results obtained were satisfactory. The procedure is an extract from a text on celestial navigation being prepared by Captain T.L. Thurlow, Air Corps.

With the advent of airplanes of such size as to be unwieldy on the ground, and of large seaplanes, the problem of compass compensation and swinging has become acute. An increased amount of electrical and radio equipment and the incorporation of retractable landing gears and kindred equipment are reasons for a much more vigilant attitude with respect to compass errors in view of the fact that the increased range of present craft is a demand for a much improved brand of dead reckoning. It is positive knowledge that the compass deviations of the larger of present day aircraft, as determined on the compass stand and in the air, are far from identical, although every reasonable precaution is taken on the stand. A possible result of these conditions may be a decrease in the accuracy of the dead reckoning due to the existence of serious compass errors that are indeterminate on the compass stand. There is little excuse for such a condition to develop, since the compass errors may be quite accurately determined in the air. A further advantage of air swinging is that it may be accomplished in a lesser time, and with reduced personnel.

First off, the installation of the compass to be swung should be given careful consideration. It is practically impossible satisfactorily to air-swing a compass that oscillates when flying a careful course by directional gyro in smooth air. The combined use of vibration dampers and sponge rubber can be applied in certain proportions (determined by experiment) to any reasonable compass mounting to eliminate the oscillatory characteristics of the high-grade aperiodic compasses common to present day air navigation.

Once a proper and satisfactory "action" of the compass is obtained, an effort should be made to reduce any large lubber line error. This can be done by aligning the compass with a tightly stretched string if the airplane is difficult to manage on the compass stand. The airplane and compass should be prepared for swinging as outlined in T.O. 05-15-1.

The data for an azimuth curve of the sun is computed for the immediate locality in which the airplane is to be swung; the azimuth being computed for every 20 minutes of time. The azimuths from solution are converted to bearings, i.e., angles measured clockwise from north, through 360 degrees, and the variation of the swinging locality applied. (Note. An error frequently is made if the variation is applied to the azimuth before the latter is converted to a bearing.) The resulting magnetic bearings are then plotted against time on any conventional graph paper of large scale, a common practice being to let a small square represent one degree of bearing (the vertical coordinate) and one minute of time (the horizontal coordinate).

If a bearing plate is not available, a shadow casting apparatus is necessary. As an example, a radio mast in the center line of the fuselage or the fin are quite satisfactory. Lacking the former, a small vertical standard may be erected above the center line of the fuselage ahead of the navigator, the fin sufficing for an additional gnomon on the aft part of the craft.

In the air, the rate of precession of the gyro should be checked by making right and left medium-banked 360 degree turns by gyro, the actual amount of the turn being determined by compass. It is obviour that the initial and final readings should agree within close limits.

The actual operation of swinging consists first, of turning the airplane to align properly the shadow cast by the gnomon. Depending upon the type of airplane and the gnomon used, proper alignment is effected when the shadow falls on some reference line on the airplane (a near horizontal one) passing directly under the gnomon when the airplane is in flying attitude. Considering the horizontal angle this line makes with the longitudinal axis, the magnetic bearings of the sun should be altered if necessary before drawing the curve, so that the curve yields the magnetic heading of the airplane when proper shadow alignment is gained; that is, if the shadow of the fin on the fuselage centerline is employed, the curve is drawn through points that are reciprocals of the 20-minute magnetic bearings of the sun. If the shadow falls on a line parallel to the airplane's lateral axis when properly aligned, with the sun on the left, the curve is drawn through points that are the sun's 20-minute magnetic bearings increased by 90 degrees. If curves for two shadow points are used, they should be labeled "sun right", "sun aft", etc., for quick identification.

To avoid errors due to change in variation and computed data, the airplane shoul be flown in an area of radius less than 30 nautical miles from the point for which the variation and sun azimuth data was computed.

Lacking a remote-controlled, movable lubber line on the gyro, the bearing from the curve is selected for a minute or more in advance and the gyro is caged to this figure. The airplane is steadied for continual shadow alignment. At the time corresponding to the curve bearing the gyro is uncaged. It then reads the magnetic heading of the airplane. The airplane is then turned right or left, by gyro, to an integral 30 degree heading close by, and subsequently in the same direction to the next two 30 degree headings; the craft being steadied on each of the headings and the compass read and recorded. A fresh alignment is again made and the compass reading is taken on three more headings. In this manner the compass reading is taken on all of the customary magnetic headings. The remote control for a B-2 Turn Indicator makes a change of 16 degrees in heading for one complete turn of the control knob. A scale graduated in 8 divisions of 2 degrees is recommended for use with this remote control.

If the remote control is used, the pilot sets his gyro for "remote control" after roughly aligning the shadow. The navigator effects the final shadow alignment and the subsequent turn to an adjacent 30 degrees magnetic heading by means of the remote control. Magnetic Heading 18°. Pilot aligns gyro on zero, remote control is turned 1 rev = 16°+2°. The turns to other integral 30 degree magnetic headings may be made without further use of the movable lubber line.

A bearing plate may be substituted for the shadow-casting gnomon; a lesser dependence on the directional gyro resulting. If, when the sighting piece is turned clockwise from a forward sight along the airplane's longitudinal axis, the scale reads an increasing angle from 0 to 360 degrees, the airplane will be headed magnetic north when the magnetic bearing of the sun is set off on the scale of the instrument and the sun is seen through the sighting piece. Therefore, if a desired magnetic heading is subtracted from the sun's magnetic bearing (adding 360 degrees to the latter, if necessary), and the resulting angle is set off on the instrument's scale, the airplane will be flying the desired magnetic heading when the sun is seen in the sighting piece. Obviously, a bearing plate permits the stars to be used.

In air swinging it is imperative that the body used be low in the sky and that the air be perfectly smooth. These conditions are inflexible.

After flight, the compass readings are compared with their corresponding magnetic headings for the magnitude and sign of the deviation. The magnetic headings are then marked off along a vertical line on a sheet of graph paper. The deviation for each heading is plotted on the horizontal line used for that heading, to the right or left, according to its sign, and to a greatly exaggerated scale so as to define a curve of large amplitude. A free-flowing curve is then drawn, using the plotted points as guides. If the curve points are plotted to a correct scale, two or three will obviously be in error. Regardless of this fact, a free-flowing curve making a proper compromise between the points should be drawn and the curve not twisted out of shape to pass through the offending points. A very satisfactory procedure is to draw, freehand, a dozen or more curves, one after another, with a soft pencil. When sufficient curves are drawn, a heavy, predominate streak will be evident. This streak should be inked for the final curve. The deviations for the card to be used with the compass are taken from this curve. If desired, a small size reproduction of the curve can be used with the compass.

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RETIREMENT OF SAN ANTONIO DEPOT LIBRARIAN

Rev. Edward Day, who has served as Post Librarian at the San Antonio Air Depot, Duncan Field, Texas, since its establishment, recently departed on a leave of absence until September 1st next, when he will be retired as a Civil Service employee at the age of 83 years. During his leave he intends to make a visit to England.

In addition to completing 15 years of efficient and faithful service with the Government, Rev. Day is rounding out a half century's career of note in professional and humanitarian service. Born July 1, 1853, in Webster, Mass., he graduated from Andover Theological Seminary and was ordained a Congregational minister in 1886, serving as pastor in various cities until 1898, and engaging in literary work from that time to 1904, when he became a minister in the Unitarian Church. In 1918 he entered war library work at Camp Cody, New Mexico, and shortly thereafter came in that capacity to the San Antonio Depot, which was then "Kelly Field No. 1," and served there continuously since then. He entered the Civil Service on July 1, 1921. In his spare time he has engaged in many educational and welfare activities in San Antonio, and for ten years served as pastor of the Unitarian Church in that city. He is a member of several learned societies and is noted as an authority and writer in the field of Semitic languages, literature and history.

Despite his 83 years, Rev. Day is remarkably hale, hearty, and vigorous, and his ever genial and helpful service as a librarian has won him the affectionate esteem of all personnel at the Depot, as

(Continued on page 16).

HAMILTON FIELD TESTS T-3 BOMB FLARE

Residents of Marin County and other communities surrounding the San Francisco and San Pablo Bay districts have no doubt wondered regarding the significance of the bright lanterns which have frequented the sky in that region at night during the past several weeks.

To the ordinary and curious laymen these happenings perhaps mean very little, but to the Air Corps officers of Hamilton Field, Calif., they have a significance of considerable importance, being part of the experimental work which has been carried on there at night to test the effectiveness of the new type bombardment bomb flare for lighting ground and water targets so that Bombing planes may locate targets and sight on them in preparation for dropping their bombs at night.

The flare being tested is constructed in the shape of a bomb, with fins and a time fuze. Loaded with lighting powder and attached to a parachute, it is carried on the regular bomb rack. The flare is dropped by the sight and timed so as to open its parachute and ignite at any prearranged altitude after its release. It gives off a light of approximately one million candle power.

The tests are divided into three phases. The first phase, which will be explained here, was conducted by the 9th Bombardment Squadron, in conjunction with the 88th Observation Squadron, both of Hamilton Field. The following procedure has been adopted in performing these tests and has served to prove to the bombardier just how useful such a flare may be in locating and dropping bombs on an objective during war-time night operations.

The test is made by having an Observation type airplane, which in time of war will avail itself of information, such as vulnerable enemy positions and targets to be destroyed, together with the best means of reaching and locating them by the use of photographs and maps, fly over or near to such an objective to be destroyed, drop an M-8 landing flare to locate and designate to the bombing planes in the distance the approximate location of the target or objective. At a designated time the Bombing plane approaches the objective and drops the flare. The flare may be released from 3,000 feet above the objective and timed to open at any given altitude above the prospective target so that it may be illuminated, thereby giving the bombardier in the nose of the Bombing plane a chance to sight on the objective to be destroyed and release his bombs accordingly.

During recent tests at Hamilton Field, the Observation airplanes have flown over the objective and dropped an M-8 landing flare at approximately 2,500 feet, in order to attract the attention of one of the Bombing planes flying at from 12,000 to 20,000 feet above and some 20 or 30 miles away. This Bombing plane would then approach the lighted area and release above it one of the new bomb flares, timed to ignite at 3,000 feet above the target. Immediately following the dropping of the new flare, the remaining four Bombing planes which were approaching the initial lighted area would attempt to pick up the target illuminated by this flare and operate their sights with the intention of releasing a bomb or bombs upon the target.

These tests have been conducted to determine the position in which the flare should be placed with respect to the target and prearranged direction of approach of the Bombing planes, in order to render the target most visible to the bomber during the sighting and dropping operations. The tests have brought out some very interesting and valuable information in regard to the use of the new type bomb flare for night bombardment operations.

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DUTCH AIR OFFICER VISITS HAMILTON FIELD

Hamilton Field played host to a gentleman high in the councils of another nation, Colonel Steensma, of Holland, representative of his country's Air Service and technical advisor for the famed Dutch commercial airline K.L.M.

Accompanied by Mr. Adamson, Publicity Director of Shell Oil Company of California, these gentlemen arrived at Hamilton Field on the morning of June 11th to observe the flying, and were guests of Col. Tinker for lunch. In the afternoon they made a tour of the field to observe the various technical departments, to study our maintenance system and our training methods in aerial gunnery and in instrument flying.

Colonel Steensma was particularly interested in the Link Trainer as a method of training pilots in blind flying, and was pleased to know that the Army as well as commercial companies have adopted it. He is in America to study the various phases of commercial and military aviation. He is also representing his government as military adviser at one of our larger airplane factories from which his country has just purchased a number of planes.

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On June 12th, the 2nd Photo Section, Langley Field, Va., made photographs of the bombing demonstration given for the faculty and officers of the Army War College. Vertical photographs were made at 18,000 feet of the 300-lb. bomb demonstration, and at 12,000 feet of the 100-lb. demonstration. Obliques and ground photos were made of both demonstrations.

THE NEW CLASS AT RANDOLPH FIELD

The July, 1936, class at the Primary Flying School, Randolph Field, Texas, numbering 132 students, comprises 10 Air Corps officers, who hold lighter-than-air ratings; 5 officers of other branches of the military service; 22 enlisted men of the Regular Army, and 95 candidates from civil life. The enlisted and civilian students will undergo their flying training under the status of Flying Cadets.

The eight months' course at Randolph Field is divided into the Primary and Basic stages, each of four months' duration. The instruction on the Primary Stage is given on a training type airplane, known as the PT, and consists of dual instruction, the fundamental flying maneuvers, accuracy work and acrobatics.

On the Basic Stage, the student advances to a larger, more powerful and speedier type of airplane, known as the BT. In this plane he reviews all of the work done on the Primary Stage, but the plane has different flying qualities, such as more nearly approach those in use by Air Corps tactical squadrons. At this stage he is also taught formation flying, strange field landings, instrument flying under the hood, and day and night navigation flights. The object sought thus far is the perfection of the student on flying technique and the development of headwork.

Students who successfully pass through the basic stage, thereby demonstrating their inherent ability to pilot an airplane, generally complete the basic flying course also. Having finished their eight months' course at Randolph Field, the successful students are transferred to the Advanced Flying School at Kelly Field, Texas, where, in the third quarter of their scholastic year, they specialize in either Attack, Bombardment, Observation or Pursuit Aviation, using service type equipment. In addition to intensive flying training in their own specialty, students are also given considerable experience in day and night navigation, instrument flying, and transition to all types of military airplanes available at the Advanced Flying School.

Upon graduation from the Advanced Flying School, all of the students are given their "Wings" and the rating of "Airplane Pilot." The Flying Cadets are assigned to a tactical squadron at one of the Air Corps stations in the United States for an additional year of training, upon completion of which they are commissioned second lieutenants in the Air Reserve, following which they serve an additional year with a tactical squadron under their status as Reserve officers. Student officers from other branches of the military service, who successfully complete the one-year course at the Air Corps Training Center are transferred to the Air Corps and assigned to duty with tactical squadrons.

All save one of the ten Air Corps officers, who are members of the new class at Randolph Field, hold three aeronautical ratings, those of "Airship Pilot," "Balloon Observer" and "Airplane Observer," while the tenth is an Airship Pilot and a Balloon Observer.

The rivalry which has existed for a number of years between California and Texas in the matter of student representation at the Air Corps Training Center still continues. In the new class, California has 20 native sons against 17 for Texas. Oakland, Portland and San Antonio, each with three students, lead the various cities represented.

The roster of the students now under orders to report to the Commanding General of the Air Corps Training Center for flying training with the class commencing on or about July 1, 1936, is as follows:

AIR CORPS OFFICERS

Majors

Raymond E. O'Neill	San Francisco, Calif.
Laurence F. Stone	Pocatello, Idaho
Warner B. Gates	Evanston, Ill.
William B. Mayer	Horseheads, N.Y.
Lester T. Miller	Marietta, Ohio

Captains

Howard H. Couch	Monrovia, Calif.
James F.J. Early	Worcester, Mass.
George G. Lundberg	Olean, N.Y.
Walter J. Reed	Scarsdale, N. Y.
John P. Kirkendall	Dallas, Pa.

OFFICERS OF OTHER BRANCHES

1st Lieutenant

Charles E. Wheatley (Cav.)	Portland, Me.

2nd Lieutenants

Alfred Ashman, (CAC)	Oakland, Calif.
Harry R. Hale (CAC)	Crescent City, Fla.
Willard L. Egy (Inf.)	Troy, N.Y.
Charles B. Winkle (Inf.)	Seaside, Oregon

FLYING CADETS

Civilians

Pelham, Morris	Auburn, Ala.
Brennan, James Francis	Girard, Ala.
Marshall, John Russell	Montgomery, Ala.
Carlson, Arthur C., Jr.	Jerome, Ariz.
Lewallon, Emmet Joseph	Hope, Ark.
Olivera, Tony	Chino, Calif.
Robinson, George Leroy	Corona, Calif.
Moore, Frederick Lawrence	Fillmore, Calif.
Hudson, Guy Leonard, Jr.	Los Angeles, Calif.
Pierce, Gordon Hugh	Los Angeles, Calif.
Goodall, Ray Gilbert	Oakland, Calif.
Lawrence, Paul L.	Palmo, Calif.
Godman, Henry Clay	Palo Alto, Calif.
Alderson, Dwight Howard	San Bernardino, Calif.
Randall, Clifford	Pasadena, Calif.
Clancy, Charles A.	San Diego, Calif.
Russell, Bartow Morrow	San Diego, Calif.

Keyes, Richard William	Orlando, Fla.
Baker, Ancil David	Moscow, Idaho
Prout, Charles Uri	Champaign, Ill.
Voorhees, Burton K.	Evanston, Ill.
Stayton, Leo Cloyd	Rantoul, Ill.
Beeson, Charles R.	Crawfordsville, Ind.
Fallows, Ronald Frederick	Mason City, Iowa
Warner, Buell	Spirit Lake, Iowa
Udlock, Richard Henderson	Danville, Ky.
Kehe, Lavern W.	Eastport, Maine
Mitchell, Frederick	Boston, Mass.
Fay, Warren Gerard	Brighton, Mass.
Hyland, John Joseph	Magnolia, Mass.
Countway, Lewis Elliott	Quincy, Mass.
Tikofski, Adolph Edward	Walpole, Mass.
Wenberg, Carlos B.	Houghton, Mich.
MacKay, Homer Matheson	Lansing, Mich.
Baker, James Bradford	Bird Island, Minn.
Gustafson, Harold C.	Duluth, Minn.
Fiegel, Leland G.	Rochester, Minn.
Schaffer, James M.	Stillwater, Minn.
Bowen, Jack	Brookhaven, Miss.
Stark, William Reynolds	Starkville, Miss.
Maloon, Kenneth R.	Laconia, N.H.
Curtice, Raymond L.	Concord, N.H.
Erhardt, Alfred John	Dobbs Ferry, N.Y.
Sprague, Wilbur B., Jr.	Manhasset, N.Y.
Alberi, Americo	Mt. Vernon, N.Y.
Rooney, Martin A., Jr.	New York, N.Y.
Watson, Ansley	New York, N.Y.
Prenoveau, Emil	Plattsburg, N.Y.
Riley, Charles P.	Rochester, N.Y.
Wilkerson, Joseph Leyburn	Durham, N.C.
Heuer, Leon Frederick	Fargo, N.D.
Thompson, Frank King	Columbus, Ohio
Amrine, Robert Y.	London, Ohio
Kegelman, Charles Clark	El Reno, Okla.
Bowman, Guy W.	Enid, Okla.
Cloverton, William H.	Stillwater, Okla.
Reed, James Otis	Eugene, Oregon
Dryer, Donald Arthur	Portland, Oregon
Stahl, Garland	Portland, Oregon
Warren, Burton W.	Portland, Oregon
Gribble, John Foster	Powers, Oregon
Hug, George Wallace	Salem, Oregon
Kauffman, Donald H.	Carlisle, Pa.
Wetzel, Maynard	Higgins, Pa.
Means, Howard M.	Kane, Pa.
Herasimchuk, John V.	Pottstown, Pa.
Freeman, Julien Walker	Clinton, S.C.
Alexander, Clay D.	Seneca, S.C.
Thompson, William Arthur	Sumter, S.C.
Sewart, Harold York	Murfreesboro, Tenn.
Hourigan, Richard Anthony	Balmerhea, Texas
Johnson, Noble Melvin	Brady, Texas
Schreiber, Harry Julius	College Station, Texas
Hill, Arthur L.	Crockett, Texas
Anderson, Claude Ivan, Jr.	Dallas, Texas
Crowder, Murray W., Jr.	Joshua, Texas
Davis, Waymond Austin	Lubbock, Texas
Soape, Carroll Hollis	Lubbock, Texas
Karam, George Lajud	McAllen, Texas
Bornett, John Franklin, Jr.	Palacios, Texas
Glaser, Russell I.	San Antonio, Texas
King, Richard Marion	San Antonio, Texas
Purvis, Meredith	San Antonio, Texas
Porterfield, George M.	Sherman, Texas
Chickering, Edwin Shepard	Temple, Texas
Bywater, Murray Alston	Salt Lake City, Utah
Duncan, Louis William	Salt Lake City, Utah
Wilson, Delmar Edward	Ephrata, Wash.
Golick, Alex J.	Hoquiam, Wash.
Middleton, Charles Robert	Mercer Island, Wash.
Brown, Thomas D.	Spokane, Wash.
Greening, Charles Ross	Tacoma, Wash.
Harper, Rubert Wilber	Macksville, West Va.
Kane, Orville Guy	Platteville, Wis.

ENLISTED MEN - PRIVATES

CALIFORNIA (Alameda)	Ciarlo, Albert A., Station Complement, Hamilton Field, Calif.
" (Long Beach)	Dean, Daniel Taylor, West Point Prep. School, Fort Winfield Scott, California.
" (San Bernardino)	Plane, Vernon C., 64th Service Squadron, March Field, Calif.
" (Santa Barbara)	Richards, John Rose, 91st Observation Squadron, Crissy Field, Calif.
" (Oakland)	Barkell, Willard J., 11th Bomb. Squadron, Hamilton Field, Calif.
FLORIDA (Manatee)	Griffin, Edward Chelsea, Air Corps Tactical School Detachment, Maxwell Field, Ala.
" (St. Petersburg)	Thomas, Morris E., 52nd School Squadron, Randolph Field, Texas.
INDIANA (French Lick)	Ballard, Ted W., Hqrs. Battery, 1st Field Artillery, Fort Sill, Oklahoma.
MASSACHUSETTS (Whitman)	Snow, John Foster, 24th Pursuit Squadron, Albrook Field, Panama.
NEW JERSEY (Atlantic City)	Rosenberg, Pincus, 25th Bomb. Squadron, France Field, Panama.
NEW YORK (Dansville)	Culbertson, Allman T., 12th Photo Section, France Field, Panama.
PENNSYLVANIA (Lancaster)	Kreider, John M., 7th Observation Squadron, France Field, Panama.
" (Norwood)	Scott, Sharon M., 2nd Photo Section, Langley Field, Va.
SOUTH DAKOTA (Spearfish)	Suiter, Theodore A., Air Corps Primary Flying School Detachment, Randolph Field, Texas.
TENNESSEE (Harriman)	Sparks, Orville Laird, Station Complement, Bolling Field, D.C.
TEXAS (San Antonio)	Kellond, Arthur W., 2nd Signal Company, 2nd Division, Fort Sam Houston, Texas.
"	Blakey, George A., Air Corps Primary Flying School Detachment, Randolph Field, Texas.
VIRGINIA (Chatham)	Viccellio, Henry, 25th Bombardment Squadron, France Field, Panama.
" (Roanoke)	Butner, Thomas L., Station Dispensary, Bolling Field, D.C.
WASHINGTON (Everett)	Lowell, Leslie O., 47th School Squadron, Randolph Field, Texas.
WYOMING (Alva)	Morris, Joseph Albrow, 67th Service Squadron, Randolph Field, Texas.

AIR CORPS ROMOTION LIST REVISED

The War Department acted swiftly in response to the President's approval of H.R. 11920, a bill to increase the efficiency of the Air Corps. One of the provisions of this Act is a revision of the present unsatisfactory method of temporary promotion in the Air Corps. Experience has shown that the prior method of selecting officers for temporary promotion was productive of many evils, since the selections were made from the standpoint of expediency rather than seniority. Under the present Act, which repealed all previous temporary promotions, the shortage of officers in the field officers' grades will be taken from the top of the relative rank list and the new selections have already been sent to the White House by the Secretary of War for the approval of the President and for confirmation by the Senate.

The present recommendations include the temporary promotion of 12 Lieutenant Colonels to be Colonels; 36 Majors to be Lieutenant Colonels; and 204 Captains to be Majors; a total of 252 temporary promotions, all taken by seniority from the Army's relative rank list. This number, combined with the 119 permanent field officers now assigned to the Air Corps, will give that branch a total of 371 field officers.

The above assignment is not conclusive, however, since a study is now in progress dealing with the reorganization of the Air Corps based on the first year's experience of the GHQ Air Force. Consequently, the exact number of field officers necessary to care for the tactical, administrative and technical needs of the Air Corps are not exactly known. The number given above, however, is below that expected when the reorganization is completed, and no demotions are expected to result from the new Tables of Organization, when they are approved.

Section 4 of H.R. 11920, touching on the temporary promotion of Air Corps officers, states:

"The President is authorized to appoint to temporary rank in the grades of colonel, lieutenant colonel, and major, without vacating their permanent commissions, such number of officers of the Regular Army Air Corps as the Secretary of War, from time to time, may determine as necessary to meet the administrative, tactical, technical and training needs of the Air Corps; the then resulting numbers in each grade, permanent and temporary, to be further increased by 5 per centum to meet the additional needs of the War Department for Air Corps officers: Provided, That such temporary appointments shall be made in order of seniority of the appointees in each grade in accordance with their standing on the relative list of Air Corps officers in their permanent grade, and that when an officer holding a temporary appointment under the provisions of this section becomes entitled to permanent promotion his temporary appointment shall be vacated: Provided further, That all Air Corps officers temporarily advanced in grade take rank in the grade to which temporarily advanced after officers holding such grade through permanent appointment, and among themselves in the order in which they stand on the relative rank list of Air Corps officers in their permanent grade: Provided further, That Air Corps officers temporarily appointed under the provisions of this Act shall be entitled to the pay, flying pay, and allowances pertaining to the grade to which temporarily appointed: And provided further, That no officer holding temporary rank under the provisions of this Act shall be eligible to command outside his own corps except by seniority under his permanent commission."

Under date of June 19th, the War Department announced the promotion of the following-named officers of the Air Corps to temporary rank in the Air Corps, Regular Army of the United States, under the provisions of the Act of Congress, approved June 16, 1936, with rank from that date:

Lieutenant Colonels to be Colonels

John Delbert Reardan
Henry C.K. Muhlenberg
John Francis Curry
Alfred Harold Hobley
Albert Lee Sneed
Walter Reed Weaver
John Henry Pirie
John Norton Reynolds
Frank Melvin Kennedy
Robert E.M. Goolrick
Jacob Herman Rudolph
Frederick LeRoy Martin

Majors to be Lieutenant Colonels

Joseph Taggart McNarney
Edwin Bowman Lyon
Hume Peabody
Earl Larue Naiden
Michael Frank Davis
Hubert Reilly Harmon
Henry J.F. Miller
Thomas J. Hanley, Jr.
Leo Andrew Walton
Ralph Pittman Cousins
Adlai Howard Gilkeson
George E. Stratemeyer
Robert LeGrow Walsh
Junius Henry Houghton
Howard J. Houghland
Charles Belding Oldfield
William Hampton Crom
Gerald Evans Brower
Robert Chapin Candee
Oliver Patton Echols
Vincent Bargmant Dixon
Lloyd Neff Keesling
Laurence F. Stone
Willis Henry Hale
William E. Kepner
William C. Ocker
William F. Volandt
Ernest Clark
Charles T. Phillips
Hubert V. Hopkins
Donald Patrick Muse
Asa North Duncan
William Elmer Lynd
Rosenham Beam
Harry Herman Young
Donald Wilson

Captains to be Majors

Frederick F. Christine
David Sidney Seaton
Oliver Stevenson Ferson
Charles Merrill Savage
George Churchill Kenney
Arthur W. Brock, Jr.
Chilton Farrar Wheeler
Earl Hamlin DeFord
Lowell Herbert Smith
Christopher William Ford
Albert William Stevens
Elmer Edward Adler
Edwin Jacob House
Ray Aloysious Dunn
Earl Spiker Schofield
Arthur Emel Simonin
Frank O'Donnell Hunter
Harold Huston George
Walter J. Reed
St. Clair Streett
John Isham Moore
Samuel Charles Skemp
Robert Gale Breene
James Franklin Powell
Neal Creighton
Alonzo Maning Drake
Victor Herbert Strahm
Ira Robert Koenig
Philip Schneeberger
Karl Shaffner Axtater
William Joseph Flood
George Morrill Palmer
John Parr Temple
Byron Turner Burt, Jr.
Earle Gene Harper
Lotha August Smith
William Valery Andrews
Edwin Forrest Carey
Merrick G. Estabrook, Jr.
Carl Franklin Greene
Perry Wainer
William S. Gravely

Harlan Ware Holden
Joseph Leonard Stromme
Rudolph William Propst
Frank Dennis Hackett
Aaron Edward Jones
Robin Alexander Day
John Y. York, Jr.
Walter Hey Reid
John Bellinger Patrick
Claire Lee Chennault
Ralph Bamford Walker
Clarence Beaver Lober
John Kenneth Cannon
Arthur John Melanson
Theodore Joseph Koenig
Grandison Gardner
Alvan Cleveland Kincaid
Omer Osmer Niergarth
Roderick Norman Ott
Aubrey Hornsby
Charles Peter Prime
Auby Casey Strickland
John Martin Clark
Rowland C.W. Blessley
Arthur Thomas
Louis North Eller
Ulysses Grant Jones
John Paul Richter
Michael Everett McHugo
Lionel Grisham
Russell Lowell Maughan
Vincent James Meloy
Earl Seeley Hoag
Charles Egbert Branshaw
Edward Whiting Raley
Harvey Hodges Holland
Walter Miller
Oliver P. Gothlin, Jr.
Edwin Randolph Page
Leo Fred Post
Dache McClain Reeves
John Carroll Kennedy
Eugene Benjamin Bayley
James Troy Hutchison
William Albert Hayward
Clayton Lawrence Bissell
Horace S. Kenyon, Jr.
Leland Charles Hurd
Harvey William Prosser
Edmund Pendleton Gaines
Robert Victor Ignico
Leland Ross Hewitt
Clifford Cameron Nutt
Arthur William Vanaman
Isaiah Davies
Franklin Otis Carroll
Frederick William Evans
Harry Gage Montgomery
Fred Cyrus Nelson
James Andrew Healy
Charles Douglas
Burton Frederick Lewis
Elmer John Bowling
Orin Jay Bushey
Hugh Albert Bivins
Edward Moses Morris
Fred Sidney Borum
George W. Polk, Jr.
Devereux Maitland Myers
Guy Harrison Gale
Alfred W. Marriner
Muir Stephen Fairchild
James Gradon Taylor
Leland Wilbur Miller
Raphael Baez, Jr.
Robert Halbert Finley
Clarence H. Welch
Alfred Jefferson Lyon
Don Lee Hutchins
Ennis C. Whitehead
Harold Lyman Clark
Sam Love Ellis
George G. Lundberg
Eugene Lowry Eubank
Lawrence A. Lawson
Bayard Johnson
Paul Langdon Williams
Frank Martyn Paul
Samuel Martin Connell
John Edwin Upston
Reuben Curtis Moffat
Charles B. DeShields
Clarence Peyton Kane
Harry Weddington
Samuel C. Eaton, Jr.
Leonidas Lee Koontz
Edward Davis Jones
Merrill Deitz Mann
Albert Carl Foulk
Edward V. Harbeck, Jr.
Edward Ernest Hildreth
Samuel Gordon Frierson
Phillips Melville
Bernard Scott Thompson
Willis R. Taylor
Robert Duane Knapp
John Gordon Williams
Albert Brown Pitts
William Colb Morris
James T. Curry, Jr.
William B. Souza
Alfred Lindeburg
Joseph Alexis Wilson
Clements McMullen
Ames Scribner Albro
Milo McCune
Charles McK. Robinson
Benjamin B. Cassidy
Charles Y. Banfill
Myron Ray Wood
Robert Theodore Cronau
Isaac J. Williams
Lloyd C. Blackburn
John Henry Gardner
William C. Goldsborough
Walter Raymond Peck
Arthur G. Hamilton
Emil Charles Kiel
Lewis Allegeo Dayton
Younger Arnold Pitts
Harold Lee George
Benjamin F. Griffin
Howard Z. Bogert
Charles Hale Dowman
Harry Anton Johnson
Bernard Joseph Tooher
Claude Edward Duncan
Thomas W. Blackburn
Barney McKinney Giles
Bob Edward Nowland
Albert F. Hegenberger
Max Frank Schneider
Donald Gardner Stitt
Glenn Charles Salisbury
Harold Ralph Wells
Malcolm Stoney Lawton
Jasper Kemper McDuffie
Mary Rhey Woodward
Howard Knox Ramey
Lionel H. Dunlap
Harold Rentsch Rivers
Harold Daniel Smith
James Pratt Hodges
Earle J. Carpenter
Frank Lauderdale Cook
Oakley George Kelly
Bernard Tobias Castor
James A. Mollison
Harold Webster Beaton
Edgar Eugene Glenn
John William Monahan
Cortlandt S. Johnson

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SELFRIDGE FIELD PILOTS INSTRUCTING WEST POINTERS

Six pilots of the 1st Pursuit Group, Selfridge Field, Mt. Clemens, Mich., under the command of Captain John M. Sterling, departed in PB-2A airplanes on June 13th for Mitchel Field, Long Island, New York, to report to the Commanding Officer of the 9th Bombardment Group for duty in connection with aerial experience instruction of West Point cadets. The pilots, in addition to Captain Sterling, were 1st Lieuts. Emmett O'Donnell, Jr., Charles H. Anderson, 2nd Lieuts. John G. Benner, Arnold T. Johnson, John P. Spake and William T. Hudnell, Jr.

The C-24 Transport, piloted by 2nd Lieut. Allan T. Bennett, with five enlisted passengers, proceeded to Mitchel Field on the same date. Upon arrival there, Lieut. Bennett turned the C-24 over to 1st Lieut. William J. Bell to return to Selfridge Field. Lieut. Bennett returned to Selfridge Field in a P-26C airplane which was flown to Mitchel Field by Lieut. Bell on June 9th so as to be available for inspection by the West Point cadets.

The flight of seven PB-2A's is expected to return to Selfridge Field about July 10th.

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D.F.C. POSTHUMOUSLY AWARDED MAJOR McCLELLAN

The War Department recently announced the posthumous award of the Distinguished Flying Cross to the late Major Hez McClellan, Air Corps, the citation accompanying same being as follows:

'HEZ McCLELLAN, major, then captain, Air Corps, United States Army. For extraordinary achievement as Commanding Officer and Pilot on a cross country flight from Washington, D.C., to Nome, Point Barrow and other Alaskan points during the summer of 1935. Captain McClellan planned the entire flight; voluntarily commanded it during its entirety and personally piloted the airplane over the thousands of miles of desolate, rough and sparsely inhabited country. He displayed outstanding initiative, resourcefulness and professional skill under the many trying conditions encountered, and by his tireless energy, sound judgment and personal courage rendered possible the successful completion of this flight. The information concerning the operation of military aircraft in Alaska, secured by Captain McClellan while on his extensive air and ground reconnaissance, has proven of particular value to the Air Corps."

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During the month of May, the Engineering Department of the San Antonio Air Depot overhauled 27 airplanes and 73 engines, and repaired 31 planes and 45 engines.

COLONEL FRANK M. KENNEDY

Undergoing flying training at College Park, Md., in 1911, when he was a 2nd Lieutenant of Infantry, Colonel Frank M. Kennedy is one of the "Early Birds" of military aviation. Unfortunately, a serious injury to his back, sustained in an airplane accident in October, 1912, at Augusta, Ga., necessitated his relief from aviation duty, and it was not until after the United States entered into the World War that he returned to the Aviation Section, Signal Corps.

Born at Chicago, Ill., July 10, 1886, Colonel Kennedy graduated in 1908 from the University of Wisconsin with a B.S. degree in civil engineering. He entered the Army shortly after leaving college. Commissioned a second lieutenant, September 25, 1908; he was assigned to Company L, 10th Infantry, and maintained his affiliation with that organization until May 14, 1917, in the meantime being promoted to 1st Lieutenant, June 12, 1916. With his promotion to Captain on May 15, 1917, he was assigned to Company M, 10th Infantry, but served therewith only a brief period, being detailed to duty in the Aviation Section, Signal Corps, June 27, 1917.

Assigned to duty at the Army Balloon School at Fort Omaha, Nebraska, he pursued a course of instruction in ballooning, and received the rating of Junior Military Aeronaut as of October 16,1917.

Following the completion of his balloon training, he remained on duty at Fort Omaha, commanding the student detachment and being in charge of all student instruction. He received high commendation for the exceptional results he achieved in the training of this student detachment.

On July 3, 1918, Colonel Kennedy was transferred to Post Field, Fort Sill, Oklahoma, where he commanded the balloon detachment and was in charge of the artillery observation course for balloon officers. Undergoing additional lighter-than-air training at the Naval Airship School at Pensacola, Fla., January to May, 1919, he qualified as an Airship Pilot. From that time until September, 1921, he was on duty in the Balloon and Airship Division, Office of the Director of Air Service, being in charge of all lighter-than-air engineering and experimental work.

Transferred to Scott Field,Belleville, Ill., in September, 1921, Colonel Kennedy commanded this post until March of the following year, and then served as Executive Officer until August 7, 1922. For the next two years he was on duty in Germany as American representative during the construction of the reparations airship ZR-3, subsequently turned over to the U.S. Navy, and he returned to the United States on this leviathan of the air, the trip consuming 3 days, 9 hours and 17 minutes. Dr.Hugo Eckner commanded the ZR-3 (subsequently christened "Los Angeles") on its non-stop flight of 5,066 miles from Friedrichshafen, Germany, to Lakehurst, N.J.

Colonel Kennedy's next assignment was as Officer in Charge of lighter-than-air activities at the Air Service Engineering Division at McCook Field, Dayton, Ohio. In June, 1927, he graduated from the one-year course at the Air Corps Engineering School at McCook Field, following which he was transferred to the Office of the Chief of the Air Corps, Washington, D.C., for duty as Chief of the Buildings and Grounds Division. It was during his tenure of duty in this position that a number of very important Air Corps construction projects were initiated, among them the new Air Corps Training Center at Randolph Field,Texas; the new post of Barksdale Field, La.; the Tactical School at Maxwell Field, Ala., etc.

A student at the Air Corps Tactical School from September, 1931, to June, 1932, Colonel Kennedy, following his graduation, remained on duty at Maxwell Field until August, 1933, as Executive Officer, and at various times performing the functions of Commanding Officer. He was then assigned to his present duty as Commanding Officer of Scott Field.

Colonel Kennedy received his regular promotion to Major, July 1, 1920; to Lieutenant Colonel, March 1, 1933, and just recently, on June 16, 1936, to the temporary rank of Colonel. He holds the flying ratings of Airship Pilot, Balloon Observer and Airplane Observer.

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COLONEL ALFRED H. HOBLEY

An officer with considerable experience in aircraft armament, Colonel Hobley's affiliation with Army aviation dates back to December 23,1917, when he reported at Kelly Field, Texas, from Fort Shafter, T.H., for duty with the 2nd Training Brigade as regimental commander and as officer in charge of sanitation and police of camp.

Born in New York City, January 21,1887, Colonel Hobley graduated from the United States Military Academy on February 14, 1908, and was commissioned a second lieutenant of Infantry. He joined the 30th Infantry at Fort William McKinley in the Philippines on July 4, 1908, and remained on duty with that regiment until June 20, 1911, when he was detailed in the Ordnance Department. Upon the expiration of his four-year detail in that department, he joined the 2nd Infantry at Fort Shafter, T.H., serving as company commander, regimental adjutant and post adjutant.

Colonel Hobley remained at Kelly Field until January 19, 1918, when he was assigned to Ellington Field, Houston, Texas, as commanding officer of the Armorers School. On March 16th of that year he became commandant of the Armorers School at Wilbur Wright Field, Fairfield, Ohio, and he brought this very important activity up to a very high degree of efficiency. He was given flying instruction while at this field and, in order to complete this instruction, he was sent to Rockwell Field, Calif., in November, 1918. He passed the required flying tests for the rating of Junior Military Aviator and was so rated as of January 6,1919. Prior to his assignment to Rockwell Field he was on duty for three months in Washington, D.C., as Assistant Executive in charge of gunnery in the office of the Director of Military Aeronautics.

Continuing his activities in connection with aircraft armament, Colonel Hobley proceeded from Rockwell Field to McCook Field, Dayton, Ohio, where he took charge of the Armament Section of the Engineering Division. During the period from September, 1921, to August 15, 1922, he was a student offider at the Engineering School at McCook Field and, following his graduation, he was assigned as assistant to the Commanding Officer of that field, and at various times performed the functions of commanding officer. He also performed the duties of Personnel Adjutant, Recruiting Officer, Intelligence Officer, Assistant Commandant of the Engineering School and Special Inspector. In July, 1924, he was designated as Air Service Procurement Planning Representative at Dayton. From December, 1925, to October, 1926, he was Chief of the Industrial Planning Section, and then Chief of the Industrial War Plans Section, Materiel Division.

Leaving Dayton in August, 1928, Colonel Hobley came to Washington for duty as Instructor at the Army Industrial College. Later, in January, 1932, he was also on duty in the Planning Branch of the Office of the Assistant Secretary of War. He pursued the one-year course of instruction at the Graduate School of Business Administration, Harvard University, September, 1932, to June, 1933, obtaining the degree of "Master in Business Administration with Distinction." He was then assigned to his present position as Chief of the Finance Division, Office of the Chief of the Air Corps, Washington.

Colonel Hobley was permanently commissioned in the Air Corps as Major, July 1, 1920. He was promoted Lieut. Colonel, June 1, 1932, and to the temporary rank of Colonel, June 16,1936.

PROGRESS OF CONSTRUCTION AT BOLLING FIELD

With approximately 900 men working on the new Bolling Field, its condition as a flying field is gradually becoming apparent. In spite of 5.78 inches of rainfall, a difference of 2.28 above normal, for the month of May, 253,567 cubic yards of dirt were moved. To date a total of 700,000 cubic yards of dirt were moved to various sections of the field. Two runways are fast taking shape, and several thousand tons of slag have been placed and rolled. The drainage system, which has proven to be a large task, is 75% completed. During May, a new record was made by completing 5,000 lineal feet of seawall. By June 1st, approximately two miles of seawall was completed.

Due to the arrangement of two 6-hour shifts, more work was accomplished during May than in any previous month. Approximately $96,000 was spent for labor, equipment and material. The job is far from complete, and the work is being carried on at a rapid rate under the watchful eyes of the construction engineers.

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NEW PLANE FOR THE CHIEF OF THE AIR CORPS

On June 11th, Bolling Field received a new BT-8 from the Seversky Aircraft Factory at Farmingdale, L.I., New York. After routine test flights, the plane was assigned to Major General Westover, Chief of the Air Corps, and attached to the 14th Bombardment Squadron, GHQ Air Force.

General Westover's O-38F airplane was reassigned to the 21st Observation Squadron, GHQ Air Force, for general flying.

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AERIAL GUNNERY AT VIRGINIA BEACH

The 33rd Pursuit Squadron, GHQ Air Force, departed from their home station, Langley Field, Va., on June 15th, for Virginia Beach, Va., for the purpose of participating in aerial gunnery training for a period of approximately two weeks. The 37th Attack Squadron, GHQ Air Force, from Langley Field, and the 97th Observation Squadron (C. & A.) from Mitchel Field, N.Y., accompanied them.

Camp was established upon arrival, and the News Letter Correspondent expresses his belief that it was not only the quickest one ever erected but presents the best appearance of the many set up in this area.

The 97th Squadron was delayed in beginning operations due to their late arrival because of poor weather conditions, but the 33rd and 37th Squadrons swung into action with early morning missions the following day.

"Lots of hard work is anticipated during our stay," says the scribe of the 37th, "but this will be compensated for by the pleasures to be found in the many diversions at hand in this delightful area in our off moments. The consensus of opinion seems to be that an indefinite stay in the field at Virginia Beach would not be too hard to take."

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LANDING MAT EXTENDED AT MOFFETT FIELD

For the information of pilots visiting Moffett Field, Calif., improvements have been effected in landing facilities thereat. Pilots will be interested in learning that the landing mat has been extended 500 feet, making the total length of same 2,000 feet. During the wet weather season it is essential that this mat be used. The taxi area extends at right angles from the landing mat to the airplane entrance of the airship hangar, being centrally located on the airdrome side of the huge hangar. A second taxi way has been constructed, extending from the south end of the landing mat to the south entrance of the hangar.

A new method of construction was used which has proven to be highly economical. The clay soil being highly unstable made it necessary to haul quarry run red rock and to stabilize this rock by the use of emulsified asphalt, rendering the runway subgrade repellant to water. The wearing surface was finished with emulsified asphalt and sand. One and three quarters gallons of emulsified asphalt was used for each square yard of surface area. Mats of this same type are being constructed at Benton Field, Oakland, and at the San Francisco airport.

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TEST FLIGHTS OF TC-13 AIRSHIP

The TC-13 airship at Moffett Field, Calif., recently completed two test flights. The performance data obtained therefrom was such that comparison with much larger rigid ships is interesting. The first flight consisted of a harbor watch mission off San Francisco Bay, operating at the speed of surface craft. Because of unfavorable weather this mission was concluded after 77 hours of flight. The indicated endurance of the ship was 150 flying hours, as it was landed with over one-half of her fuel supply remaining.

The second test was conducted at a cruising speed of 65 miles per hour. A distance of 1855 miles was logged while cruising off shore up and down the California seacoast. Fuel remaining at the time of landing was sufficient to have projected this flight to a total of 2500 miles. Compared with rigid ships of approximately 6½ million cubic ft. capacity, this non-rigid ship, being only one-eighteenth as large, has an indicated range of from one-fourth to one-third of that of the larger ship.

PENNSYLVANIA EXECUTIVE AVIATION ENTHUSIAST

Pennsylvania's Governor, Hon. George H. Earle, paid an informal visit to the Middletown Air Depot recently. The Governor, who is an enthusiastic Auto-Gyro pilot, asked permission to use the Middletown Air Depot flying field to make some practice landings. Permission having been given, he arrived half an hour later, accompanied by his instructor, Lieut. Cammy Vinet, P.N.G., who is also Director of Aeronautics of the Commonwealth of Pennsylvania. Following the Governor in two Stinson "Reliants" were several members of his staff and friends from Harrisburg. After several practice landings, Governor Earle taxied to the line and the party proceeded to the Officers' Club as guests of the Depot Commander, Colonel Lawrence S. Churchill.

Governor Earle is an aviation enthusiast who does the greater part of his traveling about the State by air, covering many thousand miles each month. Although he has shown no inclination to pilot an airplane, he has purchased an Auto-Gyro for his private use and utilizes it as a means of relaxation and recreation as well as for the more practical purpose of traveling.

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MODEL AIRPLANE FLYING AT MOFFETT FIELD

Moffett Field, Calif., is the scene of considerable activity in connection with test flights by airplane model builders. Each Sunday morning many young Americans in the vicinity gather at the field to fly their engine-driven model airplanes, with wing spreads of from three to six feet. Enthusiasm has reached such a pitch that motor supply houses report that they cannot meet the demand for small gasoline motors.

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DEPOT PERSONNEL SUBJECTED TO AIR ATTACKS

Several of Texas' famed mocking birds make their homes in the trees at Duncan Field, Texas, the site of the San Antonio Air Depot. During the nesting season, particularly around the Headquarters building, they have been giving vigorous demonstrations of aerial combat tactics against "ground troops," all passers-by being suspects. Various members of the Headquarters office force can be observed from time to time, as they enter or leave the building, dashing along with head ducked down, closely pursued by the intrepid flyers with wing and beak. Two pet dogs also, though innocent of any evil intentions, are forced to seek cover whenever the feathered tribe take to the air.

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Lieut. Colonel George H. Brett, recently nominated Brigadier General, has been ordered to Panama upon completion of his course of instruction at the Army War College.

GRADUATES OF THE AIR CORPS TRAINING CENTER
June 17, 1936

Name	Rank	Home	Station Assignment
Air Corps Officers			
Gillespie, Reginald R.	Captain	Spencer, Iowa	Chanute Field, Ill.
Paul, Wilfred J.	Captain	White Plains, N. Y.	Hamilton Field, Calif.
Salsman, John G.	Captain	Madison, Wis.	Brooks Field, Texas.
Axtater, Karl S.	Captain	Omaha, Neb.	O.C.A.C., Washington, D.C.
Ent, Uzal G.	Captain	Northumberland, Pa.	A.C.T.S., Maxwell Field, Ala.
Holmes, Ralph E.	1st Lt.	Walnut Creek, Calif.	Kelly Field, Texas.
Officers, Other Branches			
Coiner, Richard T.	1st Lt. Cav.	Portland, Oregon	Mitchel Field, N.Y.
Holzapfel, William	2nd Lt. C.E.	Racine, Wis.	Maxwell Field, Ala.
Tibbetts, Gene H.	2nd Lt. Inf.	Winterhaven, Fla.	Hamilton Field, Calif.

Flying Cadets

Name	Home	Name	Home
Bicking, Charles Wesseler	Pittsburgh, Pa.	Martin, Ray Hamilton	Austin, Texas
Bledsoe, James Lee	Los Angeles, Calif.	McCloskey, Richard Dale	Lancaster, Pa.
Beardsley, Melville W.	Kansas City, Mo.	Mears, Frank E. Jr.	Monrovia, Cal.
Boyer, Jimmy Vinson	Newport, Tenn.	Michael, Bruce	Geneva, Ill.
Bronson, Howard F., Jr.	Harrisburg, Pa.	Miller, William Waring	San Diego, Calif.
Buller, Howard L.	Stanford University, Calif.	Moore, Andrew Dale	Worthington, Minn.
Burke, Kevin	Buffalo, N.Y.	Nevitt, William Renwick	Houston, Texas
Catlin, Ralph Wm. S.	Bay City, Mich.	Osborn, Roy William	Sanborn, N.D.
Chapman, Charles T.	Corpus Christi, Texas	Oshar, Norman C.	Graettinger, Iowa
Converse, Lawrence Floyd	Glendora, Calif.	Pechuls, John Allison	Pullman, Wash.
Cullerton, Edward F.	Butte, Mont.	Peterson, Homer F.	Moscow, Idaho
Curry, William Lewis	Raleigh, N. C.	Powers, Robert Becke	Seattle, Wash.
Dane, Paul Howard	Pasadena, Calif.	Rethorst, William	Piedmont, Calif.
Eyre, Lloyd	Los Angeles, Calif.	Reynolds, John Norton, Jr.	Los Angeles, Calif.
Faulkner, Ted Sinclair	Seattle, Wash.	Ridings, Donald Ellis	Moscow, Idaho
Fausel, Robert Wilton	Louisville, Ky.	Russell, Clyde Raymond	Chandler, Ariz.
Ferguson, James	Whittier, Calif.	Saehlenou, Hadley Vincent	Hollywood, Calif.
Flolo, Russell LeRoy	Aberdeen, S. D.	Sandegren, Thomas Eastman	Tacoma, Wash.
Griffith, Willard Dudley	Spokane, Wash.	Schaetzel, George Edward	Alhambra, Calif.
Grove, Robert Leslie	Dallas, Texas	Schultz, Herbert D., Jr.	Alameda, Calif.
Hampton, Thomas Kerns	San Marino, Calif.	Sluder, Chester Lee	San Antonio, Texas
Hardy, Robert Franklin	Flint, Mich.	Thomas, Jack	Lubbock, Texas
Haws, Jesse William	Provo, Utah	Trembly, Wonderful A.	Dallas, Texas
Helmick, Paul F.	Corvallis, Ore.	Warner, Jo K.	Berkeley, Calif.
Jones, James Marion	Temple, Texas	Whitfield, Harvey Haydon	Houston, Texas
Ketcham, Edward W.	Madison, S.D.	Zehrung, Paul Weitzel	Dayton, Ohio

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CONTRACT AWARDED FOR PURSUIT AIRPLANES

The Assistant Secretary of War, Hon. Harry H. Woodring, recently announced the award of a contract for the construction of 77 single-seater Pursuit airplanes, and for the construction of spare parts equivalent to 8 airplanes, to the Seversky Aircraft Corporation of Farmingdale, Long Island, N.Y. The total amount of the award is $1,636,250.

In accordance with the established practice of the War Department, the airplane for which the award was given has been thoroughly tested by the Army Air Corps at the Air Corps Materiel Division, Wright Field, Dayton, Ohio, in conjunction with several other airplanes entered in the competition held to determine the award of this contract.

The airplane is of the all-metal low wing monoplane, single engine type, with retractable landing gear, and represents a marked advance in performance over types of Pursuit airplanes now in service. It has an inclosed cockpit for the protection of personnel at high speeds and altitudes, with resultant low temperatures, at which an airplane of this type normally operates. It is powered with the latest developed Pratt and Whitney two-row radial engine.

A manually controlled constant speed multi-position propeller is employed having sufficient range of pitch change to provide maximum efficiency in take-off, climb and high speed, and also to prevent excessive overspeed in a dive.

The airplane is as small as is consistent with the performance demanded and loads carried. It has a monocoque fuselage and cantilever wings and tail surfaces. It is equipped with flaps which increase the allowable gliding angle above the normal value and, acting as an air brake, decreases the roll of the airplane after it has landed, which in case of a forced landing, or when the necessity demands, makes it possible to land in a much smaller space than would otherwise be the case, thereby facilitating operations and increasing the safety of the pilot. The airplane is equipped with exceptionally strong overhead protection for the pilot in case of a nose over.

Another safety feature used in conjunction with the retractable landing gear, in case of an emergency landing in a restricted area, is the fact that the portion of the airplane which makes contact with the ground, if the landing gear is retracted, is designed to absorb this shock without appreciable damage to the airplane. This feature materially reduces the travel of the airplane when on the ground and thus minimizes collision with obstacles in the landing area. The airplane can take off in an exceptionally short distance with full military load and possesses a great differential between high speed and landing speed.

Pursuit aircraft are designed to destroy other aircraft in flight, thereby denying the enemy air force the necessary freedom of action over our territory. To perform this mission, speed and climb to high altitude must be emphasized in the design of single place Pursuit airplanes. The airplane for which this award has been made meets these prerequisites to a high degree, thereby aiding materially to our National Defense.

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BOLLING FIELD UNHEALTHY FOR MOSQUITOES

The latest interesting medical developments at Bolling Field were sponsored by Captain L.E. Griffis, the Flight Surgeon. He organized a much needed branch of the Health Department, consisting of four enlisted men, Privates Marker, Darby, Pierce and Patton. They instigated a war on mosquitoes and their objective was to spread oil on all possible breeding places. Their task was a large one because of many areas of swamp and low ground that accumulate puddles of water after the spring rains.

The large drainage system which is usually found on a flying field was another obstacle to overcome. The detail used 1200 gallons of old oil, spreading it on the swamps and low ground where water is likely to stay, and using a drip system for sewers. The drip system consisted of a mixture of oil and sawdust in perforated cans, suspended in manholes.

After a hard fight juggling oil drums and killing several black snakes and water snakes, it is believed, says the Bolling Field correspondent, that the detail has had considerable success.

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Major Thomas A. Dobyns, Jr., Inspector General of the 6th Corps Area, accompanied by his assistant, Warrant Officer Elmer Cook, arrived at Selfridge Field, Mich., on June 8th, to conduct the annual inspection of activities at that field. The Inspector General completed his inspection on June 11th.

FLAG DAY CELEBRATION AT SCOTT FIELD

Colonel Frank M. Kennedy, Commandant, turned Scott Field over to the Sons of the American Legion of Illinois and Missouri for their gala Field Day, June 14th, which was sponsored by the Scott Field American Legion Post. Several hundred boys competed in the eight events before a crowd of approximately 25,000 people.

Competition was held in model airplanes (Army types), flying of model airplanes, track meet, relay race, drill teams and drum and bugle corps. Twelve P-26 Pursuit planes from Selfridge Field, Mich., were flown in an exhibition of 20 minutes' duration. Several girls' drum and bugle corps entertained between events, and the American Legion Band of Belleville, Ill., played at Retreat ceremony.

Mr. J.B. Murphy, Illinois Department Commander of the American Legion, made the Flag Day speech, and afterwards Governor Henry Horner of Illinois presented the trophies to the winners of the various events. Many American Legion dignitaries and public officials attended the Field Day program.

Colonel Kennedy headed the Reception Committee and greeted Governor Horner; Mr. Rufus Jackson, Postmaster of the City of St. Louis, and many other civic as well as Legion officials. All of Scott Field's officer personnel assisted the Scott Field American Legion Post in making the Field Day a huge success. Colonel Kennedy, as Honorary Chairman of the Field Day Committee, gave official approval to every plan and preparation that would provide comfort, interest and pleasure to the Legion visitors and the general public.

Captain Neal Creighton, commanding officer of the 9th Airship Squadron, as Field Director, saw that all plans were placed in the proper hands and executed. Captain Haynie McCormick, Police and Prison Officer, in charge of the Traffic and Grounds Committee, completed plans for traffic control, parking, refreshment stands, rest rooms and many other details which were of great importance for the comfort and convenience of the visitors. Lieut. Ralph O. Brownfield, Adjutant, in charge of the Refreshment Committee, supervised the distribution of food and drink for the three large frfreshment and sandwich stands. All other officers served on various committees.

Two Scott Field boys, both members of the Sons of the American Legion, won medals in the Field Day events held at Scott Field. Arthur Lindberg, Jr., son of Mr. Arthur Lindberg, a civilian employee at the Helium Repurification Plant, won first prize medal for his model of an Army Pursuit plane, and Arthur Hildebrande, son of Staff Sergeant Vernon A. Hildebrande, 15th Observation Squadron, won second prize in the same event.

It is planned to hold a Field Day for the Sons of the American Legion each year in the future.

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Major General Charles E. Kilbourne, commanding the Sixth Corps Area, made an inspection of Scott Field, Belleville, Ill., on June 16th, and departed the following day at 9:30 by air for Chanute Field, Rantoul, Ill.

RESERVE COMMISSIONS FOR FLYING CADETS

The following-named Flying Cadets, who graduated from the Advanced Flying School, Kelly Field, Texas, June 22, 1935, and who have been on active duty for the past year with Air Corps tactical units under their cadet status at the stations indicated, have been recommended for commission as second lieutenants in the Air Reserve, viz:

Barksdale Field, La.

Freeman, Moultrie Powell	Clinton, S.C.
Graham, John William	Fort Worth, Texas
Hazlett, George Wilson	Tarentum, Pa.
Jones, Charles Duncan	Jackson, Miss.
Raines, Charles Theodore	Vienna, Ga.
Wood, Don McLaurin	Eaton, Colo.

Hamilton Field, Calif.

Philpott, James A.	Pomona, Calif.

Selfridge Field, Mich.

Barrow, David C., Jr.	DeSota City, Fla.
Bates, Earle E., Jr.	Winnetka, Ill.
Berry, Jack W.	Corvallis, Oregon
Branch, Irving Lewis	Glenbrook, Conn.
David, William B.	Calhoun, Ga.
Dunlap, Donald S.	North East, Pa.
Feaganes, Joseph Furman	Wytheville, Va.
Lawver, Kenneth W.	Freeport, Ill.
Long, Frederick Cecil	Palouse, Wash.
Marks, Jack S.	Los Angeles, Calif.
McKesson, Elmer Earle	Richmond, Va.
Schumacher, Richard P.	Los Angeles, Calif.
Sewart, Allan J., Jr.	Murfreesboro, Tenn.
Smith, Charles E.V.	Hastings, Neb.
Strother, Donald R.	Winfield, Kans.
Ziler, John Carl	South Gate, Calif.

Langley Field, Va.

Adair, Claude B.	Columbia, S.C.
Davis, Wm. Edgar, Jr.	Wilmington, N.C.
Hale, Sam Harlan	Greenville, S.C.
Junger, Mathias Frank	Cincinnati, Ohio
Morgan, Herbert Jr.	Freedom, Pa.
Pearson, Benjamin J.	Gig Harbor, Wash.
Pender, Preston Patton	Hendersonville, N.C.
Ragsdale, William P., Jr.	McAllen, Texas
Rambo, Wilkie Adsit	Beaumont, Texas
Reed, Robert R.	Oklahoma City, Okla.
Schmid, Clarence L.	Palo Alto, Calif.
Scott, S. Emil	Jourdanton, Texas
Williamson, Paul B.	Peoria, Ill.

Mitchel Field, N.Y.

Barrett, Thomas Jay	Kenton, Ohio
Fisher, William P.	Southern Pines, N.C.
Hoover, Herbert Henry	Knoxville, Tenn.
Markey, Harry W.	Beaverdam, Va.
Massion, John Wendel	Salt Lake City, Utah
McElwain, Douglas S.	Pavilion, N.Y.
Nelson, Hilmer C.	Vashon, Wash.
Olson, A. Donley	Little Fork, Minn.
Rodgers, John Norwood	Bellevue, Pa.
Thomas, Lawrence M.	Cooper, Texas
Womble, Robert E., Jr.	Overlea, Md.

Brooks Field, Texas.

Haugan, Victor Raymond	Seattle, Wash.
Hoogens, Cedric R.	Athens, Ga.
Wilbur, Walter F.	Gilbert, Ariz.
Wilson, Monty Duren	Spokane, Wash.

March Field, Calif.

Brush, Robert P.	Pasadena, Calif.
Campbell, Blaine B.	Salt Lake City, Utah
Polhamus, Robert Gray	San Marino, Calif.
Smith, Douglas Whitehill	Mill Valley, Calif.
Travis, James Linn	Portland, Oregon

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GENERALS APPOINTED TO COMMAND AIR CORPS UNITS

On the recommendation of the Hon. George H. Dern, Secretary of War, the President, on June 18th, sent to the Senate the nominations of the following general officers of the Air Corps, who on confirmation will be assigned to duty with the General Headquarters Air Force or in Hawaii and the Panama Canal Zone:

To be Major General -

Colonel Frank M. Andrews, Langley Field, Va., in command of the General Headquarters Air Force.

To be Brigadier General -

Colonel Henry C. Pratt, Langley Field, Va., in command of the Second Wing, GHQ Air Force.

Colonel Gerald C. Brant, Barksdale Field, La., in command of the Third Wing, GHQ Air Force.

Colonel Barton K. Yount, at present a student at the Army War College, Washington, D.C.

Lieut. Colonel Delos C. Emmons, Fort Shafter, Hawaii, in command of the 18th Composite Wing, Air Corps.

Lieut. Colonel George H. Brett, at present a student at the Army War College, Washington, D.C.

All the appointments are temporary and will be effective only during the period that these officers are assigned to appropriate commands in the Air Corps.

Of the new general officers appointed, Generals Andrews, Pratt and Brant were previously general officers, but their appointments as such were vacated by a new law approved June 17th, necessitating their redesignation.

General Andrews will be reassigned to the command of the GHQ Air Force, and the five Brigadier Generals will be assigned to the command of the three Wings of the GHQ Air Force and the two composite wings in Hawaii and the Panama Canal Zone. These assignments will be made after the confirmation of the appointments by the Senate.

All six officers have had long and distinguished flying careers.

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Retirement of Rev. Day

(Continued from page 5.)

well as of many at Kelly Field whom he has served, particularly the school children, to whom he has proved a tower of strength in their studies. The absence of the familiar figure of their kindly friend and eminent associate will be keenly felt at the Depot, and the sincerest wishes of the personnel thereof go with him in his well-earned retirement.

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Selfridge Field was honored by a visit from Major General Charles E. Kilbourne, Commander of the 6th Corps Area, on June 11th. The General arrived at noon, made an informal inspection of the post, and departed after luncheon. He was accompanied by two aides from his headquarters.

GRADUATION EXERCISES AT ADVANCED FLYING SCHOOL

By the Kelly Field Correspondent

Class No. 25-B, consisting of 9 Regular Army officers and 52 Flying Cadets, making a total of 61 students, was graduated from the Air Corps Advanced Flying School, Kelly Field, Texas, on June 17, 1936. Brigadier General J.E. Chaney, Assistant Chief of the Air Corps and the Commanding General of the Air Corps Training Center, was invited by Kelly Field to receive the aerial review and make the graduation address to the students and present them their diplomas. General Chaney, accompanied by his staff, arrived at Kelly Field for the graduation exercises on the morning of June 17th and was welcomed by the officers of the school staff at Post Operations. The flying cadets and students from Randolph Field, from both primary and basic stages, arrived shortly after General Chaney reached Kelly Field, and formed immediately in front of Post Operations, on the line, facing south. At approximately 9:00 o'clock, General Chaney and his staff took their position to receive the review, just in front of this line of students from Randolph; and at 9:00 o'clock the graduating class climbed into the cockpits of the airplanes to which they were assigned for the review, taxied on to the airdrome at 9:05, and the take-off signal was displayed at 9:10.

The Bombardment flight, led by Capt. Gillespie, consisting of 16 Keystone Bombers, arrived at the reviewing stand at exactly 9:30. At about 1,000 yards they were followed by the Observation flight, led by Captain Axtater, which consisted of 14 Observation planes of both the O-19 and O-25 series. The Attack Section followed next, at the same interval, led by Flying Cadet Schaetzel, the flight consisting of 9 Curtiss Falcons. The last element, consisting of the Pursuit flight, at its 1,000-yard distance, led by Cadet Haws, followed the Attack. It consisted of 11 Boeing P-12 airplanes.

After the airplanes participating in the review returned to the airdrome, the cadets and student officers from Randolph Field proceeded to the Post Theater to be present for the graduation exercises, and airplanes of each type which had been used in training, both at Randolph and Kelly Fields, were taxied to the apron in front of Post Operations, and with appropriate descriptive cards thereon, were placed on display for the benefit of visitors.

Graduation exercises were held at 10:45 in the Post Theater, which was filled to capacity by relatives and friends of the graduating class, from Army and civilian circles, from all over the country. After an invocation by Chaplain McMurray, of Randolph Field, Major Wolcott P. Hayes, as Acting Commandant of the School, introduced General Chaney as the principal speaker. General Chaney made a very interesting and timely address to the class, and presented an accurate, interesting picture of what they could expect during the first years of their service. Following his address, the General presented each student with his diploma and congratulated him upon having successfully completed the course of training. Chaplain McMurray's benediction brought the exercises to a close.

This class, which reported to Kelly Field on March 3, 1936, at that time consisted of all those who graduated, with the exception of two flying cadets, who were unable to complete the course. This resulted in graduating 61 out of the 63 original students to report in the class.

At this writing, orders for Lieuts. Coiner, Tibbetts and Holzapfel have not yet been received. Captain Gillespie is under orders to report to Chanute Field; Captain Paul to Hamilton Field; Captain Salsman to Brooks Field; Captain Ent to the Air Corps Tactical School, Maxwell Field; Captain Axtater to the Office of the Chief of the Air Corps, Washington, and Lieut. Holmes to Kelly Field. The station assignments of the Flying Cadet graduates appear elsewhere in this issue of the News Letter.

The class completed all of its prescribed training in spite of the shortage of airplanes and officers at this station, and it is believed that the graduates will be a real credit to the service. In view of the high standard of candidates in the course and the exacting accomplishment required during the training period, each student is to be congratulated upon his successful completion of the course.

GENERAL CHANEY'S ADDRESS

"It is with great pride that I congratulate you of the graduating class upon your successful completion of the course of training at the Air Corps Training Center.

Approximately a year ago you reported at the Training Center as especially selected men endowed with high mental, moral and physical qualifications, full of life and with an eagerness and determination to learn to fly. Many of you came from the adulation of the campus lower classmen with an almost inherent desire for the spectacular. Then came the realization that to remain in this School requires more than the simple desire to fly. You found that the spectacular must give way to safety, to good judgment and to common sense. You adjusted yourselves and proved your flying ability. Most of you have evolved from raw recruits of a year ago to airplane pilots of today. You have accomplished a definite goal; the sacrifices have been great, but temporary. May the reward be equally great, and permanent. You represent the product of our labors for a year's time, and I say without the slightest hesitation that we are proud of you.

You stand at the threshold of a combination of the newest and the oldest professions known to mankind: Flying and Military. As a military pilot you are joining a profession characterized by high ideals, and an unceasing devotion to duty must transcend thought of self and personal gain. In the military service you will not accumulate much in the way of worldly goods, and often you will work hard and long with little or no praise, but remember you are a member of an organization in which the achievements of many of your predecessors in wide fields of activities may be pointed to with just pride. They should inspire you to have the determination to carry on faithfully under all conditions.

As a member of our military organization you will meet people in all walks of life. Pride in your profession dictates that you make the best possible impression upon them. You must remember that all the members of your profession may be judged by the impression you make. In your civilian contacts and in your dealings with the enlisted personnel of the Army, be courteous and always maintain that dignity which is indicative of pride in your profession.

In your relations with officers of other arms of the Service, remember that we all have our role to play in the scheme of national defense and that success can come only through teamwork. Although some may play a more spectacular role that appeals to the grandstand, remember that it is the work of the team as a whole that spells the difference between defeat and success.

Some of you have chosen to specialize in Pursuit, some in Bombardment, some in Observation and some in Attack. Some will choose to gain a commission in the Regular establishment. Others will either by choice or necessity return to civil life. Some will follow commercial flying. Others will choose business or professional careers. It is hoped that you will all remain active in aviation and derive dividends from your efforts here. Regardless of the course you may choose, you have gained invaluable experience in your training which will be of the greatest benefit to you throughout your life.

Those of you who go from here to a tactical organization for further training as flying cadets before you are commissioned, I want to impress with the fact that although flying is a prerequisite of an Air Corps officer, there are other qualities expected of an officer which are of paramount importance. You may feel that your status is so temporary that there is little need of your exerting yourselves. I caution you against this attitude. Perform your duties in a manner that will make your commanding officer glad and proud to recommend you for a commission. I sincerely hope that before you have completed your active service, legislation will make it possible to commission a great number of you in the Regular Army Air Corps. However, in any case, make your success here the start of a successful life, either military or civil.

In your training you have mastered the technique of flying. Experience and judgment you must in time get for yourselves. In this connection, if I can be instrumental in leaving with you a message that will help to safeguard your future flying I will feel that this talk will not have been in vain. I hope your future flying in the service will be characterized by common sense and good judgment and that you will resist the temptation of carelessness and recklessness.

At the School, many decisions have been made for you. You have been under constant restraint. That restraint to a large extent will be lifted effective today. From now on you will be much more on your own. The risk will be greater. The percentage of casualties at the School has always been extremely small. Yet for the period of two years after graduation it has averaged quite high. Thereafter it has fallen off. It is obvious, therefore, and it should be recognized, that you are about to enter the danger zone. Do not try to tax your abilities or your equipment to excess. Try to gain your experience gradually and avoid the foolhardy. A large proportion of the accidents are attributable to personal errors and to weather. In most cases, weather should be classified as a personal error. It is easy to get into bad weather and difficult to get out. Before flying into bad weather, know what you are doing, know that you have the ability and the equipment to get out. Many missions require great daring and personal risk. However, I do want to stress the necessity of gaining your experience slowly and surely, so that you will be competent to meet the unavoidable hazards when they come. Remember that casualties are greatest among the younger pilots and much rarer among the more experienced ones. Yet few will deny that the actual ability to maneuver an airplane exists in you young men today to as great a degree as it does in any group of similar size in the entire world.

Build up confidence in yourself. By self-confidence I do not mean egotism. Self-confidence is founded on knowledge, and it comes from knowing that you possess the ability requisite for that which you are about to undertake. It took Dewey past cannon, torpedoes and mines to victory at Manila Bay. It carried Farragut, lashed to the

GRADUATING CLASS ADVANCED FLYING SCHOOL
JUNE 17, 1936

rigging, past the defenses of the enemy at Mobile Bay. It led Nelson and Grant to victory. It sustained Columbus before a jeering Cabinet and again among mutinous sailors in a little vessel upon an unknown sea where he held steadily to his purpose, writing in his diary day after day, "This day we sailed west, which was our course."

It was self-confidence, founded on the knowledge of his thorough preparation and ability, which gave courage and determination to Lindbergh, an illustrious graduate of this institution, to make his immortal flight from New York to Paris when practically the whole world was against him. It has won a thousand victories in war and in science which were deemed impossible.

Whatever you do, wherever you go, bear in mind that the choice of a definite goal in your career and a determination to reach it are essential to success. Do not let your course be aimless. As soon as you have gained one objective, choose a new one. Plan your careers and never rest on your laurels. Fate seems kindest to those who rely least upon it.

Remember that from now on you will be piloting not only your airplane but your career. May you steer a good course and a most successful and happy one."

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PHOTOGRAPH OF GRADUATING CLASS

Front row (left to right):
Flying Cadet J.N. Reynolds, Jr.; 2nd Lieut. W.J. Holzapfel, Jr.; 1st Lieut. R.E. Holmes; Captains U.G. Ent, Karl S. Axtater, J.G. Salsman, R.R. Gillespie; W.J. Paul; 2nd Lieut. G.H. Tibbetts; 1st Lieut. R.T. Coiner, Jr., and Cadet A.J. Baumler.

Second row (left to right):
Flying Cadets W.A. Trembly; H.F. Peterson; C.T. Chapman, Jr.; R.F. Hardy; P.F. Helmick; R.W. Fausel; P.W. Zehrung; E.F. Cullerton; G.E. Schaetzel; W.R. Nevitt; L.L. Bledsoe; H.L. Buller and T.K. Hampton.

Third row (left to right):
Flying Cadets C.L. Sluder, J.A. Pechuls; R.L. Flolo; Jack Thomas; Lloyd Eyre; L.F. Converse; W.L. Curry; R.B. Powers; T.E. Sandegren; R.W. Osborn; F.H. Mears, Jr.; Kevin Burke; C.W. Bicking; H.V. Saehlenou.

Fourth Row (left to right):
Flying Cadets H.F. Bronson, Jr.; E.W. Ketcham; M.W. Beardsley; E.M.Strieber; B.E. Michael; W.W. Miller; R.D.McCloskey; C.R. Russell; H.H. Whitfield; J.M.Jones; R.L. Grove and J.W. Haws.

Fifth row (left to right):
Flying Cadets T.S. Faulkner, James Ferguson; A.D. Moore; J.K. Warner; H.D. Schultz, Jr.; J.V. Boyer; Wm. Rethorst; W.D. Griffith; N.C. Osher; D.E. Ridings; R.W. Catlin; R.H. Martin and P.H. Dane.

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STATION ASSIGNMENT OF FLYING CADET GRADUATES

Flying Cadets, members of Class 25-B, who graduated from the Advanced Flying School, Kelly Field, Texas, on June 17th, last, were assigned to duty at Air Corps stations, as follows:

To March Field, Calif:

Attack	Bombardment
Converse, Lawrence F.	Hardy, Robert F.
Mears, Frank H.	Ketcham, Edward W.
Reynolds, John N., Jr.	Miller, William W.
Schaetzel, George E.	Nevitt, William R.

To Selfridge Field, Mich.:

Pursuit	
Boyer, Jimmy V.	McCloskey, Richard D.
Haws, Jesse W.	Michael, Bruce E.
Helmick, Paul F.	Saehlenou, Hadley V.

To Mitchel Field, N.Y.:

Bombardment	Bombardment
Beardsley, Melville W.	Sluder, Chester L.
Burke, Kevin	Thomas, Jack
Chapman, Charles T., Jr.	
Grove, Robert L.	Observation
Jones, James M.	
Osborn, Roy W.	Catlin, Ralph W.
Osher, Norman C.	Hampton, Thomas K.
Peterson, Homer F.	Rethorst, William

To Barksdale Field, La.:

Pursuit	Attack
Buller, Howard L.	Cullerton, Howard L.
Ferguson, James	Fausel, Robert W.
Whitfield, Harvey H.	Griffith, Willard D.
	Trembly, Wonderful A.

To Langley Field, Va.:

Bombardment	Pursuit
Bicking, Charles W.	Bledsoe, James L.
Curry, William L.	Dane, Paul H.
Eyre, Lloyd	Attack
	Russell, Clyde R.

To Hamilton Field, Calif.:

Bombardment	Bombardment
Bronson, Howard E.	Ridings, Donald E.
Faulkner, Ted S.	Sandegren, Thomas E.
Powers, Robert B.	Warner, Jo K.

To Brooks Field, Texas:

Observation	Observation
Flolo, Russell L.	Pechuls, John A.
Martin, Ray H.	Schultz, Herbert D., Jr.
Moore, Andrew D.	Zehrung, Paul W.

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SELFRIDGE FIELD TO HAVE ITS OWN MAIL STATION

Selfridge Field, Mich., will have its own post office, effective July 1st. It will be known as a "classified postal station" and will be under the direction and supervision of a superintendent to be appointed by the Mt. Clemens Postmaster. Under the new set-up, mail addressed to Selfridge Field will come direct from Detroit to Mt. Clemens and then sent to Selfridge Field without additional handling.

Washington Office Notes

On June 18th, Major General Oscar Westover and Brigadier General Henry H. Arnold proceeded to Hartford, Conn., for the purpose of inspecting the Pratt & Whitney, Hamilton Steel Propeller and Chance Vought aircraft factories.

General Westover was in New York on June 26th in connection with the administration of government contracts, and on June 29th left for Chanute Field, Ill., to deliver an address on the occasion of the graduation exercises at the Air Corps Technical School.

Officers reporting for duty in the Office of the Chief of the Air Corps were Major Charles Y. Banfill and Captain M.H. McKinnon, June 24th and 25th, respectively, in the War Plans and Training Division, and Major Karl S. Axtater in the Buildings and Grounds Section, Supply Division, on June 23rd.

Officers on duty in the Office of the Chief of the Air Corps who recently departed on leaves of absence were Colonel Rush B. Lincoln and Lieut. Colonel Vincent B. Dixon.

Major A.C. Kincaid returned June 21st from Wright Field, where he attended a meeting of the Board of Officers to evaluate Primary Training planes.

Captain George V. McPike reported for duty in the Office of the Assistant Secretary of War on June 27th.

Lieut. Colonel H.S. Burwell flew to Langley Field, Va., on June 15th and returned on June 22nd.

Visitors in the Office of the Chief of the Air Corps recently, during the course of extended navigation flights, were Major Arthur B. McDaniel from Fort Leavenworth, Kansas; Captain Bernard A. Bridget, from Randolph Field, Texas; and Captain Walter E. Richards from the Boston Airport.

Air Corps officers visiting the Chief's Office during the course of leaves of absence were Lieut Colonel G.E. Brower from Fort Leavenworth, Kansas 1st Lieut. Edward W. Suarez from Hamilton Field, Calif.; Major E. E. Hildreth and Captain Thomas M. Lowe from Maxwell Field, Ala. The two last-named officers were formerly on duty in the Information Division. Captain Lowe is shortly to take station at Port Columbus, Columbus, Ohio, for duty with the Organized Reserves.

Colonel Jacob E. Fickel was a visitor on June 20th, enroute to San Francisco, Calif., where he is to report to the Commanding General, Ninth Corps Area, for assignment to duty with the Air Corps at his headquarters.

Major H.W. Holden left on June 30th on a month's leave of absence and will then report for duty at the Air Corps Tactical School, Maxwell Field, Ala.

Major Lowell H. Smith left on June 24th on an extended flight to Wright, Chanute, Selfridge and Mitchel Fields.

Major A.E. Easterbrook returned June 19th from an inspection trip to the Air Corps Tactical School at Maxwell Field; the Air Corps Training Center, Randolph Field, and the Air Corps Technical School, Chanute Field.

Capt. S.W. Towle, Jr., returned from leave June 27th, and Capt. D.F. Stace returned from a cross country flight to Wright Field on June 16th.

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NATIONAL ELIMINATION BALLOON RACE

(Continued from page 3)

Navy, Lieut. Commander Francis H. Gilmer, pilot, Reginald H. Ward, aide; No. 3, U.S. Navy, Lieut. R.F. Tyler, pilot, Lieut. M.F.D. Flaherty, aide; No. 4, Goodyear Tire & Rubber Co., Frank Trotter, pilot, V.L. Smith, aide; No. 5, Melford F. Vanik, Buffalo, N.Y., pilot; No. 6, Roy S. Cunningham, Detroit, Michigan, pilot.

Captain McCormick has 16 years service with the lighter-than-air branch of the Army Air Corps, and has had actual experience with nine balloon races in the past eleven years. In 1925 he flew in the National Balloon Race as aide to Captain William J. Flood, their balloon placing second. That same year he flew with Captain Flood in the International Balloon Race at Brussels, Belgium, where their balloon placed 14th. Captain McCormick served as Operations Officer for the National Balloon Races of 1928, 1929, 1930 and 1931, and for the International Balloon Race at Cleveland, Ohio, in 1930. He flew again as aide to Captain Flood in the National Balloon Race of 1932. In 1934 he piloted the Army entry to 4th place, with Captain J.P. Kirkendall as aide in the National Balloon Race held at Birmingham, Ala. He was then designated pilot of the Army Air Corps balloon for the International Balloon Race at Warsaw, Poland, but he was unable to go.

Lieut. Tarro, who was trained at the Balloon and Airship School at Scott Field, and who now has ten years' experience with lighter-than-air craft, has been selected as aide to Captain McCormick. Lieut. Tarro has already had a taste of balloon racing, having flown as aide to 1st Lieut. Edgar M. Fogelsonger in the 1931 National Balloon Race at Akron Ohio. At present Lieut. Tarro is the lighter-than-air Operations Officer at Scott Field.

Besides sending a pilot and an aide to the National Balloon Race, Scott Field will send four enlisted men and sufficient inflation equipment to care for all six entries. Three enlisted men of the 9th Airship Squadron, Master Sgt. Joseph H. Bishop, Staff Sergeant L.M. O'Neill and Sergeant Joseph J. Bahorich, all veterans with many years' experience with airships and balloons, will handle the entire field inflation equipment, but will serve as a ground crew for the Army entry. The fourth enlisted man, Staff Sergeant William Farrell, of the Sixth Signal Service Detachment, a meteorologist, will act as the official weather man for the race.

Captain William J. Flood, Air Corps, formerly attached to the lighter-than-air branch and stationed at Scott Field, is now attached to the heavier-than-air branch, with station at Edgewood Arsenal, Md. Captain Flood, who has flown racing balloons in both the National and International races, has been selected as the Operations Officer for the National Balloon Race this year.

The 1936 Army entry is a standard service balloon of 35,000 cubic feet gas capacity, constructed of single-ply fabric. It is 40.6 feet in diameter, 127.55 feet in circumference, and 56 feet overall height. It will be equipped with the following instruments: altigraph, altimeter, statscope, clock, thermometer, rate of climb indicator, line course and ground speed indicator, stop-watch, two regular S-1 Army parachutes, radio receiver for commercial broadcast band only, and maps and instruments for plotting the course of the flight.

The gross lift of the 35,000 cubic feet of hydrogen is 2,450 pounds. The highest average flying altitude will be about 16,000 feet above sea level, more than three miles high. The take-off point at Denver is over 5,000 feet above sea level. The value of the equipment, including envelope, net, valve, basket, parachutes, equipment and instruments, is approximately $5,500. The hydrogen gas which supplies the lifting power for the balloon will cost approximately $6 per thousand cubic feet at Denver. At this price it will cost $210. to inflate the balloon completely full as required by the racing rules. The balloon can be filled with gas in 45 minutes, if necessary, though a much longer time is taken.

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ARMY AIRMEN VISIT BATAN ISLAND

By the Nichols Field Correspondent

Basco, Batan Island, half way between Manila and Hong Kong, where every woman wears a unique headdress probably unmatched anywhere in the world, where no white man lives, and where ships seldom stop, was visited recently by a flight of three O-19 airplanes of the Second Observation Squadron.

Captain Harvey W. Prosser, flight leader; Captain Harold R. Wells and 1st Lieutenant Francis M. Zeigler piloted the ships on this 450-mile mission that called for one refueling stop at Vigan on the northwestern coast of Luzon.

That part of the flight from Luzon's northern coast over the stepping stone chain of islands stretched out almost due north to Basco, Batan Island, was absorbing. These volcanic islets, so spaced that upon leaving one you immediately sight the other, all seem distended by at least one volcano, active, dormant, or extinct. Their peaks reach up from three to five thousand feet and are seldom without their cloud mantles. The larger of the islands seem to harbor two or more small villages.

Babuyan Island itself was kicking up a dust with a wide awake volcano, belching forth a solid column of jet black smoke and permeating the air with noxious gases. The smoke seemed to be driven vertically several hundred feet before it slowly spread and gradually disappeared, leaving in the air faint dark lines, a kind of transparent giant spider's web. Visualize an imperfect tear drop and you are seeing Batan Island from a birdseye view. Its topography spells "volcanic origin." Basco and four other smaller villages earmark its shores.

A welcoming committee, namely, three padres, the one and only Japanese resident on the island, and more children than Pied Piper ever snared, greeted the flyers. With the local constabulary left to guard the planes, the flying personnel, along with the welcoming committee and all the children that could hang on, mounted the ancient Reo truck (the only piece of motor transportation on the island) for the three-mile ride over the ox-cart road into Basco. The obstreperous Reo complained under her heavy load by blowing two priming cocks, and when they pushed her on despite her snorts, she "upped" and blew a tire in disgust, for well she knew that spare tires and mending materials were not to be found on the island.

The island's provincial secretary played the perfect host to our flyers on their overnight stay.

Basco is famed, or should be, for its uncopied woman's bonnet. This inimitable millinery is made of grass thatched to form-fit the head, extending down the back to the waist. Whether the Basco woman wears it for protection from the sun and rain, or to pretty herself for her "Bill," is a question we cannot answer, but you will rarely see her without her milliner's creation.

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BOMBING DEMONSTRATION FOR WAR COLLEGE GRADUATES

Langley Field airmen riddled "enemy" targets on Plum Tree island bombing range recently in an uncanny exhibition of marksmanship which captured the imagination of 120 graduates of the Army War College 1935-1936 Class, and a hundred or so spectators lining the beach. Results of the demonstration were highly satisfactory, and those in charge were elated at the thorough manner in which the air fighters "chewed up" the targets.

Forty-three planes, (19 Bombers, 18 Pursuit and 6 Attack) took part in the big aerial show. For a little over an hour the airmen gave exhibitions of formation flying, long-range gunnery, tow target gunnery, machine gun attacks on a water target, and bombing from high altitudes.

Only one feature of the demonstration was altered, and that was the fault of the weather. Low hanging clouds, which peppered the spectators with rain during a part of the afternoon, marred visibility to such an extent that a bombing exhibition at 18,000 feet had to be switched to a lower altitude.

The accuracy with which the bombs and the machine gun bullets found the targets was little short of remarkable. Particularly was this true in the final feature of the demonstration, when 18 Bombers, flying at 12,000 feet, dropped 108 bombs, each weighing 100 pounds, on a ground target. The bombs exploded within a few seconds of each other in a small area, demolishing the targets and illustrating vividly the destruction that might result if a state of war existed and the airmen were really serious about it.

War College graduates who were making a tour of Virginia's battlefields and places of historical and military significance, reached the Lower Peninsula in chartered buses and, following luncheon at Old Point Confort, went immediately to Messick, where temporary bleachers had been erected for them on Forrest's wharf facing the bombing range.

In a brief talk, Brigadier General Henry C. Pratt, commanding the Second Wing, GHQ Air Force, welcomed them and explained that the demonstration was one of the firing power rather than tactics. Pursuit and Attack demonstrations were explained by Lieut. Colonel A. H. Gilkeson, talking through an amplifying system rigged up on the wharf. Occasionally the planes were tuned in, and spectators heard orders from overhead.

A spectacular phase of the show was long-range gunnery in which the planes swooped down in formation over the stands and poured a withering fire into two targets which, despite their distance from the spectators, seemed uncomfortably close at times. This was followed by a close-up demonstration in which the machine guns got in action 800 yards from the targets. The staccato bark of the guns, mingled with the din from the power plants of the planes, created a strangely realistic effect.

The concluding phase of the demonstration was an exhibition of bombing from high altitudes. This was explained by Lieut. Colonel W. H. Hale, Executive Officer of the Second Wing. Each Bomber carried a crew of four - two officers and two enlisted men. Three planes dropped nine 300-pound bombs, followed by 18 planes with 108 one hundred-pound bombs, the largest number of demolition bombs ever dropped in salvo so far as Langley Field officers knew.

Lieut. Colonel Charles B. Oldfield was in command of the B-10's. The planes came up in formation once, but had to turn about and start all over when they ran into a cloud.

Following the demonstration, the visiting officers left for Langley Field, where officials of the National Advisory Committee for aeronautics showed the visitors the full-scale wind tunnel in operation. Inspection of all post activities followed.

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FIRST LIEUTENANTS STEP UP ONE GRADE

The following-named first lieutenants of the Air Corps were promoted to the rank of Captain:

With rank from June 12, 1936

Turner A. Sims, Jr.
Samuel W. Van Meter
Alfred H. Johnson
Samuel R. Harris, Jr.
Shelton E. Prudhomme
John P. Doyle, Jr.
Leon W. Johnson
Guy B. Henderson
Henry R. Baxter
Morris R. Nelson
Kenneth P. McNaughton
James B. Burwell

With rank from June 13, 1936

Charles H. Deerwester
Charles W. O'Connor
Bernard A. Bridget
John F. Guillett
Dixon M. Allison
Charles A. Bassett
Narcisse L. Cote
George H. Sparhawk
Joel G. O'Neal
Alva L. Harvey

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SECOND LIEUTENANTS ALSO HAVE THEIR INNING

The following-named second lieutenants of the Air Corps were promoted to the rank of First Lieutenant as of June 13, 1936:

Paul R. Gowen
Marshall Bonner
P. Ernest Gabel
Thomas S. Moorman, Jr.
William L. Travis
Thomas B. Hall
David N. Crickette
Edward J. Hale
Travis M. Hetherington
John G. Armstrong
William O. Senter
Vernon C. Smith
Harry S. Bishop
Frank P. Hunter, Jr.
Harold R. Maddux
Dwight Divine, 2d.
Edward D. Narshall
Harry N. Burkhalter, Jr.
Lawrence B. Kelley
Carlyle W. Phillips
Douglas M. Cairns
Richard J. Meyer
Milton F. Summerfelt
Gabriel P. Disosway
Jewell B. Shields
Franklin S. Henley
Cordes F. Tiemann
Samuel A. Mundell
Bruce von G. Scott
Felix L. Vidal
Earl F. Signer
Richard T. King, Jr.
Stephen B. Mack
James D. Underhill
Nelson P. Jackson
Karl Truesdell, Jr.
Robin B. Epler
Sydney D. Grubbs,Jr.
Millard L. Haskin
Richard M. Montgomery
Charles H. Pottenger

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WAR DEPARTMENT ORDERS AFFECTING AIR CORPS OFFICER

CHANGES OF STATION: To Randolph Field, Texas: 1st Lieut. Stoyte O. Ross, from Langley Field, on or about February 15, 1937 - 2nd Lieut. William S. Van Nostrand, 7th Cavalry, Fort Bliss, Texas, for flying training with class commencing about July 1, 1936.

To Oakland, Calif.: 1st Lieut. George E. Henry, from Crissy Field, for duty with Organized Reserves, 9th Corps Area.

To Barksdale Field, La.: Major Frank O'D. Hunter, from Panama. Previous orders in his case amended.

To Hawaii: Lieut. Colonel Millard F. Harmon, Jr., 20th Pursuit Group, Barksdale Field, La.

To Panama: 1st Lieut. John T. Sprague, from Langley Field, Va.

To Philippines: 1st Lieut. John Paul Ryan, from Aberdeen Proving Ground, Md., sailing about January 8, 1937.

TRANSFERRED TO AIR CORPS: 2nd Lieut. John B. Cary, Corps of Engineers, June 3, 1936, with rank from June 12, 1934.

Sergeant Dennis Hayes, 67th Service Squadron, Randolph Field, Texas, was placed on the retired list on June 30, 1936.

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General Henry H. Arnold, Assistant Chief of the Air Corps, accompanied by Colonel Chalmers G. Hall, Chief of the Supply Division, Office of the Chief of the Air Corps; Major Wilton B. Persons from the Office of the Assistant Secretary of War and Captain William L. Ritchie, from the Office of the Secretary of War, stopped at Scott Field on June 12th, while flying to Kansas City to confer with the Assistant Secretary of War.

AIR CORPS

NEWS LETTER

ISSUED BY
OFFICE, CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D.C.

VOL. XIX JULY 15, 1936 NO. 14

VOL. XIX **Air Corps News Letter** NO..14

Information Division
Air Corps
July 15, 1936
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE MEDICAL CONTRIBUTION TO THE DEVELOPMENT OF BLIND FLYING

By David A. Myers, Major, Medical Corps, U.S. Army.
From the Medical Bulletin, July, 1936.

Many aviators and most laymen have no proper conception of the term "Blind Flying." To the vast majority it simply means flying when the pilot cannot see things clearly. To the properly trained aviator, the ability to do Blind Flying and to understand the basic underlying human reactions governing the same means the difference between life and death.

The pioneer medical research work accomplished during 1926 by the author of this article firmly established the basic principles from the human standpoint on which the art of Blind Flying is founded.

Many lectures and demonstrations before civic bodies, clubs and technical societies were given by the author. In all of the articles published and the lectures and demonstrations given, the basic principles discovered were freely discussed and explained, resulting in a more or less general understanding by the public of the underlying physiological reactions experienced in Blind Flying.

In all the articles published and demonstrations given, a most efficient and tireless co-worker, Lieut.-Colonel William C. Ocker, Air Corps, was given equal credit with the author for his development of the technical apparatus used, and supplying the stimulus for the research by being courageous enough to declare that "aviators could not do Blind Flying." Why, he did not know.

Blind Flying is that flying accomplished in which any visible reference to the earth for the purpose of recognition of position is impossible by reason of fog, storms, dust, complete darkness, thick clouds, etc.

Simulated Blind Flying is that flying in which visual reference to gravity for the purpose of recognition of spatial position is limited to the pilot's cockpit and its equipment, by means of proper coverage of the cockpit. Simulated Blind Flying is that flying accomplished by visual reference to the instruments installed in the airplane. Therefore, the proper term is "Instrument Flying," or, as it is expressed by airmen, "Flying under the Hood."

Since the beginning of time and until recent years, mankind has traveled almost entirely on the surface of the earth or the oceans. Man's invasion of the air began when small animals attached to balloons were sent into the air to ascertain if life were possible above the earth's surface. They all returned safely to earth, with the exception that one suffered a broken leg, thus establishing the fact that this contemplated flying era would produce its category of ills and problems for the doctors to treat and solve. From this time to the epoch-making flight of the Wrights at Kitty Hawk, mankind continued his efforts to fly. From the Wrights at Kitty Hawk to the present space annihilating airplane is a long ways in terms of transportation. It has been a much longer way in terms of adapting the human body to the changes and the solution of the medical problems presented.

The present generation is the first to move freely in three dimensions as do the birds and fishes. The evolution of mankind has reached a more or less fixed stage when aviation was born and, as flying was not concerned in this evolution, mankind developed into an "earthbound" entity. Every human being, in arriving at his present state, has had one common factor in his development - contact with mother earth. Individually we are nothing more than the sum total of our experience stored up in our brains, plus the body we live in. These experiences are obtained for storage as the result of the action of our special senses: (1) sight, (2) hearing, (3) taste, and (5) touch. Two more, vitally important to the aviator, are (6) muscle sense, and (7) vestibular or Kinetic-static sense.

Stimulation of any of these senses arouses action, and action eventually results in consciousness, a knowledge of our environment and a perception of the physical facts constituting that environment. It is apparent that all our stored up experience has had a common stimulator, contact with the earth and its material objects. Experience, based on our special senses, has taught us how to adjust ourselves to our various environments. The lessons we learn from experience are indelibly impressed on our consciousness. One of the earliest lessons learned is how to maintain our equilibirum. Undoubtedly equilibrium is a bodily function maintained by the action of all of the special senses. Some of these senses enter very little into this maintenance; taste, smell and hearing have little, if any, effect; tactile sense or touch, used in connection with muscle sense, has a little more effect. Chiefly, if not entirely, we maintain our equilibrium by means of a coordinated cooperation of (1) sight, (2) muscle sense, and (3) vestibular sense. By the use of this "trinity sense" we are able to maintain and realize position, rate and direction of motion, and generally orient ourselves in relation to the earth.

Man's equilibrium on the ground consists of the ability to maintain his body in any position it is possible or desirable to put it. Man's equilibrium in the air consists of the ability to maintain an airplane, which he has become a part of, in any position it is possible or desirable to put it, plus the added factor that all contact with the earth is entirely lost except for two things: (1) sight, and (2) the column of air the plane is flying in. Human sensations, reactions and consciousness having developed after countless years of contact with the earth, it is not possible for man to invade the air and safely function using the prior experiences stored up in his brain by a set of special senses evoluted in contact with the earth.

Stabilized equilibrium, either in the air or on the ground, is maintained only when each of the trinity of senses - (1) sight, (2) muscle sense, and (3) vestibular sense - function correctly, and their stimulations are correctly interpreted by the brain. Some equilibrium and orientation may be present with all three imperfectly acting. Adjustment to environment will take place if two remain unimpaired. The combinations of impairment, function, and adjustment are many. All compensatory equilibrium or adjustment to environment, however, has been developed on the ground, and in taking to the air we separate ourselves from the universal common factor, earth contact, and attempt to function with a set of senses and stored up experience developed for earthbound use only.

Since time began, human beings have been receiving sensations in their brains and storing them away for future use and guidance when the same situation again arises. In the process of storing away these sensations the brain has accomplished many seemingly weird things. The image of objects on the retina is upside down; yet the brain properly interprets, and we actually see right side up. That portion of our equilibrium sense having its origin in the vestibular apparatus is stimulated into action by body motion. This may be accomplished by motion of the body itself or motion of any object with which the body is in contact. This moving body need not be in contact with the earth to have this sense stimulated into action. We walk, run, ride a merry-go-round, ride in an airplane, and by use of our equilibrium sense are able to maintain any possible or desirable position. Although the three senses - (1) sight, (2) muscle sense, and (3) vestibular sense - are bound into one combination sense (the equilibrium triplets), each of them may be brought into separate action, and send its messages to the brain. We can "muscle sense" our position without sight. We can "sight" our position without the aid of the others. Acting alone, the "vestibular sense" will give the brain information regarding motion, rate of motion and direction of motion.

Sight is the reliable one of the "triplets." "Muscle sense" is an alert, variable acting "triplet". The bad actor of the three is the vestibular sense. This sense, constantly alert, delicately sensitive, and easily stimulated into action, must be continually checked up on and kept under control by the other two of the combination if proper and continuous equilibrium is maintained. If the body, on the ground or the body and an airplane in the air be turned, as in a spin, all three of these senses, acting in coordination, will give reliable information regarding body motion and position both on the ground and in space. Ground equilibrium and spatial orientation will be complete.

Sight is the same in the air as on the ground. Muscle sense (the so-called seat sense of the airman) cannot be as good in the air as on the ground, having been developed by years of contact with the earth and its material objects. Automatically, on taking to the air, one is robbed of a great portion of their muscle sense. All airmen have developed "seat sense" - some to a high degree, and most of them have that essential thing, "the feel of the ship." No false impressions are received from (1) sight and (2) muscle sense. They may be much lessened in case of lack of proper vision or poorly developed muscle sense. Their messages to the brain, whether jointly or separately, are reliable. This is not true of the messages received from the vestibular sense. If your body is rotated in any dimension of space, certain definite and fixed messages will be sent to the brain by the vestibular sense acting in coordination with sight and muscle sense. Provided this body motion is not so violent or long continued as to produce loss of perception, your brain will receive reliable information from this trinity of senses and you will maintain your equilibrium and know accurately at all times what position your body occupies with relation to the earth's surface and what direction, if any, it is moving. If, during this rotation, your body is stopped or retarded, you will have a momentary sensation of giddiness, but you will immediately, by the use of your sight, adjust yourself to the earth (gravity) and maintain your equilibrium.

Whenever the human body is rotated in any dimension of space, with the eyes closed, thus removing vision from the trinity of (1) sight, (2) muscle sense, (3) vestibular sense, and this rotation is (a) retarded, (b) stopped, (c) reversed, or (d) continued until rotating body motion is coincident with the motion of the fluid in the vestibular (semi-circular) canals, just as definite and fixed messages will be sent to your brain as if the eyes were open and vision intact, but each and every one of these messages will be false. You will be able to correctly interpret the original starting motion only. You will recall that the vestibular apparatus is primarily composed of three tiny sets of fluid filled canals placed at right angles to each other in the labyrinth, in the sagittal, coronal and horizontal planes; thus providing motion sensing in any dimension of space.

Let us now conduct a practical experiment in order to visualize what happens when your vision is absent and your body is rotated. Any smooth running revolving mechanism will do. A barber chair is ideal. Flight surgeons use the Jones-Barany chair. In such a mechanism only right or left rotation is possible; therefore, only the action of the horizontal motion sensing vestibular canals can be demonstrated in this chair. In an orientator any of the spatial positions may be assumed, and the corresponding canals tested. The results are the same in any case. If there is such a thing as acquiring immunity, the horizontal canals, being the ones in constant daily use, should be less sensitive than the others. It was found that there was no difference, and that constant use did not affect the sensitivity. With the eyes covered, rotation at any average speed is started. You will immediately and correctly interpret right or left rotation. Having always experienced this same sensation during prior experience of body motion to the right or left, you will be positive as to what is happening. The number of rotations should be limited in order that too violent reactions will not be produced. If on the sixth to eighth rotation the motion of the chair is now retarded to a slow speed, you will have an immediate sensation of turning in the opposite direction, and a message will be sent your brain to that effect by the vestibular apparatus, which is now acting without its "control co-ordinator," your sight. You will be positive your body is now turning in the opposite direction of prior motion. If the rotating chair is now stopped, the sensation of opposite turning will be much intensified. This sensation of opposite turning will last from five seconds to as high as 25 seconds in some individuals. The average is about 23 seconds. This average was established after examining hundreds in the Jones-Barany revolving chair during the research conducted. Every human being has his own individual threshold of vestibular stimulation and reaction.

If the rotation of the body is continued (usually 8 to 10 turns), until the motion of the body and the motion of the fluid in the semi-circular canal being stimulated is the same speed, you will apparently put the vestibular sense out of action, and your brain will receive an immediate message that all motion has ceased and you are sitting still.

Repeated reversal of rotation, without stopping, creates an utter confusion of motion sensing. What has happened? Vertigo (to turn or turning) has been produced. Vertigo consists of two things:

(a) a sensation of turning in the opposite direction to prior motion, and

(b) a sensation of falling in the same direction as prior motion.

Vertigo is medically defined as: "The subjective sensation of a disturbed relationship in space."

You will now realize that the pioneer aviator dependent on messages sent to his brain by his vestibular sense, acting without the "control co-ordinator, vertigo stopper," sense of sight was in a dangerour predicament.

The above is exactly what happens in Blind Flying. All visual reference to the earth, or any object the prior position of which in relation to the earth's surface is part of your consciousness is absent, and only muscle sense and vestibular sense remain. As a matter of fact, a real blind man would function better in this predicament, because after all there is no difference in not being able to see anything and not being able to see, except that the real blind would have usually developed compensatory equilibrium to a high degree.

All of the published literature and the research work accomplished prior to the original research conducted by Lieut. Col. Ocker and the author during 1926-1928 concentrated on one idea: the finding of a way of producing immunity against vertigo by means of placing pilots in a freely movable, revolving apparatus, and turning their bodies through the various spatial positions in the belief that constant repetition of motion would establish an immunity. Every old-time pilot has had "a ride" in the Jones-Barany chair, and most of them have spent hours in some type of revolving orientators. Nothing came of all this, except to establish the fact that pilots who could expertly handle an orientator were possessed of a high degree of muscle sense and a keen sense of perception. No immunity was obtained against the reactions experienced in that deadly enemy of the airman - the spin. No immunity was possible from a physiological or a technical standpoint, because no research or experiment conducted had arrived at a solution of the problems involved.

Prior to the original research conducted by the author into the physiological aspects of Blind Flying, there was no scientific basis established on which to build instructions to airmen in the practical application of these perfectly normal physiological reactions experienced when doing Blind Flying.

Vertigo is one of the oldest symptoms found in medical literature, and when clinically present is believed to have a pathological basis. No prior study of vertigo as a purely physiological entity, to establish it as a causative factor in the behavior of human beings in their adjustments to their environment, has been found in the medical literature, and none is believed to exist. The author desires to go on record as believing that induced physiological vertigo (that is, vertigo without pathological basis) may be a common causative factor in human behavior in vocations other than flying. The automobile, swiftly and freely movable in any horizontal plane, subjects the occupants to many of the factors that tend to produce "Induced Vertigo."

All vertigo reactions follow certain definite and fixed lines, and all humans are subject to the same reactions, varying only in intensity. A human being in which these reactions are absent or distorted is abnormal and has either met with a physical disaster or was born without proper functioning sense apparatus. In such cases some of the normal acting senses must compensate for this lack in order that the individual may avert disaster and simulate normal control in following the ordinary routine of life.

Continued in next issue.

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NEW AIRBANES FOR 17TH ATTACK GROUP

The 34th Attack Squadron, March Field, Calif., has been equipped with six Northrop A-17's, the 73rd with three and the 17th Group Headquarters with two. They are in the air continually, as pilots of the 17th are anxious to try their hand with a new type of plane. The Boeing P-12 Pursuit plane has been used since the institution of the GHQ Air Force in March, 1935.

ILLUMINATING TARGETS FOR NIGHT BOMBING

Bombardment planes nowadays must be prepared to bomb objectives at night as well as during the bright sunshine of the day. Illumination of targets for night bombing has been given a great deal of study by the First Wing at March Field, Calif., through its Ordnance Officer, Captain Philip Schwartz, Ordnance Department.

Skies above Muroc Dry Lake, the site of the First Wing's Bombardment and Gunnery Range, were illuminated the night of June 25th by flares having a million candle power each. Using the light from this source, pilots of the 11th Bombardment Squadron from Hamilton Field and the 30th Bombardment Squadron from March Field dropped imaginary bombs from their Martin B-10 Bombardment planes. All of the flares used were dropped by a Douglas Observation plane from the 88th Observation Squadron, Hamilton Field.

Dropping the flares called for considerable skill on the part of the pilot from the 88th. The light had to be placed in the proper position in respect to the target. This was done in order that the bombardiers, looking through the bomb sight telescope, could sight satisfactorily.

The flares used weighed forty pounds and were equipped with time fuses in order that they might be lit at any desired time after leaving the plane. Burning for two minutes, the flares were composed of barium nitrate and aluminum powder with castor oil as a binder.

At the conclusion of the mock bombing, the planes of the 11th Bombardment Squadron returned to Hamilton Field, while the planes from March Field returned to that station.

High ranking officers who watched the demonstration were Colonels Henry B. Clagett, Wing Commander, and John H. Pirie, commander of the 17th Attack Group; Lieut. Colonel Howard C. Davidson, commanding the 19th Bombardment Group, and several other unit commanders.

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CRUISING RANGE OF NEW ATTACK PLANE

Illustrating the greatly increased cruising range now possible with the new Northrop Attack plane, Lieut. Charles B. Overacker, of the 17th Attack Group Staff, flew a round trip from March Field to Hamilton Field in 5 hours, 35 minutes, without landing. This involved a total of over 814 miles. In other words, a squadron, flying formation, using this type of Attack plane, could leave March Field just after breakfast, attack the Infantry garrison in the Presidio of San Francisco, over 400 miles away to the north, and return to March Field in time for a late lunch. This demonstration by Lieut. Overacker attracted favorable attention.

FIVE-DAY WAR AT FORT SILL, OKLA.

The Field Artillery School closed its course this year on June 27th, terminating the year's training with a five-day simulated war, during which time the officers in training were busy demonstrating their ability or lack thereof, as augmented by the school course.

The Air Corps took a major hand in the war games, the usual services of Flight "E" and the 1st Balloon Squadron being enlarged upon with the assistance of three A-17 Attack planes from Barksdale Field, La., and three O-43 Observation planes from Brooks Field, Texas.

The airplanes and balloon were on the go early and late. The 1st Balloon Squadron accompanied the Blue Army into the field in full field service kit, while the planes operated from the hangars as usual.

Photographic and visual reconnaissance, accompanied by radio communication, helped to ascertain targets for the Attack planes, which ably "strafed" and laid smoke screens for the further education of the student officers in general. The war went on and off smoothly, only minor failures of equipment being experienced.

According to the News Letter Correspondent, the war demonstrated the fact that high altitude observation can find targets for the Attack and Bombardment, and direct their attack thereon; further, that the Artillery must improve its camouflage for combat maneuvers. The motorized units had considerable difficulty regarding full concealment of vehicles because of sun reflection from nickled or polished surfaces and from glares of tail and stop-lights at night.

In addition to the personnel at Fort Sill, Lieuts. Bunker, Wise and Livingstone from Barksdale Field, and Lieuts. Coates, Dolan, Macrum, Stewart and Hillsinger from Brooks Field, were commended for their excellent cooperation in this general field exercise.

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THE NEW CLASS AT ADVANCED FLYING SCHOOL

The present class at the Advanced Flying School, Kelly Field, Texas, reported in for duty on June 20th and began ground school on June 25th. This continued for one week, and flying began on July 1st. The class consists of 34 Regular Army officers, 2 foreign officers and 38 Flying Cadets. They are assigned to sections, as follows: Attack, 6 officers and 10 Cadets; Pursuit, 6 officers, 10 Cadets and one Mexican officer; Bombardment, 14 officers and 16 Cadets; Observation, 8 officers, 7 Cadets, and one officer from the Philippine Constabulary.

CHANGE IN COMMANDERS AT KELLY FIELD

Outstanding events at the Advanced Flying School, Kelly Field, Texas, in the last few weeks were the departure of Colonel Jacob E. Fickel and the arrival on the post of his successor as commanding officer, Lieut. Colonel Arnold N. Krogstad. Originally slated to go to the Panama Canal Zone, Colonel Fickel's orders were changed, sending him to Corps Area duty at the 9th Corps Area.

Colonel Krogstad was officially greeted by the staff of Kelly Field and prominent citizens of San Antonio at a luncheon given at the Kelly Field Officers' Mess on July 2nd. At this luncheon were all the members of the staff and faculty of the field, the guests of honor being the commanding officers of neighboring fields and the Air Corps Training Center, viz: General J.E. Chaney, Air Corps Training Center; Colonel J.H. Howard, Duncan Field; Colonel H.W. Harms, Randolph Field; Colonel H.J.F. Miller, Brooks Field; Major Pursley, Air Officer of the 8th Corps Area; and Major Thompson, commanding officer of the Normoyle Depot, where some of the Kelly Field personnel are quartered. The civilians in attendance, representing the Military Affairs Committee of the San Antonio Chamber of Commerce, were headed by Mr. L.B. Clegg, who for the past eight or ten years has been chairman of that Committee. Accompanying Mr. Clegg were Colonel Tuttle, Engineer Reserve, head of the Public Service Company of San Antonio; Mr. I. Kampmann and Mr. William M. McIntosh, publisher of the San Antonio LIGHT.

Mr. Chamberlain, the oldest living president of the San Antonio Chamber of Commerce, was present at the luncheon as guest of honor.

The speakers at the luncheon were Col. Peyton, as representative of the Corps Area Commander; Messrs. Clegg and McIntosh. Colonel Peyton, who welcomed Colonel Krogstad to this Corps Area, referred most cordially to the relations existing between the Air Corps units of San Antonio and the ground forces stationed thereat. Mr. Clegg, as a pioneer of Texas, welcomed Colonel Krogstad to San Antonio and its facilities. Mr. McIntosh, as representative of the press, voiced his natural appreciation of the Colonel's arrival and welcomed him, offering him all the cooperation afforded by the press of San Antonio.

Major Wolcott P. Hayes conducted the luncheon as master of ceremonies.

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Lieut. R.C. Rhudy was the first Kelly Field pilot to take advantage of the new extension on cross-country radius from that field. His flight in a Pursuit ship took him to Gainesville, Fla., and return on perfect schedule.

JUNE A BUSY MONTH AT BOLLING FIELD

The usual last minute rush was encountered at Bolling Field, D.C., during the month of June as officers completed the various missions required before the end of the fiscal year. All available planes were kept busy during the day and, although two nights each week were designated for night flying, it was found necessary to fly every night toward the end of the month in order that pilots stationed at the War Department and Office, Chief of the Air Corps, might complete the training requirements of War Department Circular #69.

As a precautionary measure, and in order to facilitate operations, a control tower 15 feet high, with an 8-foot platform, was constructed directly in front of the Operations Office. This tower is equipped with a radio remote control system, a Signal Corps directional wind indicator, office telephone and an airways control light for controlling air traffic. It is ideally located for night flying, as it gives the operators in charge an unobstructed view in all directions. With the rapidly increasing day-time traffic during the summer, it is probable that a system of air traffic control will be devised, in which case the tower will be a ready means for overcoming any unforeseen congection.

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FAST WORK ON MAPPING PROJECT

The practical peace time value of an Air Corps photographic section was recently demonstrated by the 23rd Photographic Section, March Field, Calif., when it mapped 171 square miles of territory in the State of Idaho in forty minutes actual photographic time.

The detail from March Field, Lieut. Kenneth B. Hobson, pilot, and Technical Sergeant William M. Brees, photographer, consumed one day in flying to the Idaho rendezvous with the Corps of Engineers, flying via Las Vegas to Pocatello. There they met representatives of the Northwest Division of Army engineers. It was explained that the territory to be mapped was on the upper Snake River in the vicinity of Rigby, Idaho, 15 miles north of Idaho Falls.

A Fairchild T3A camera was used for this work. The camera took five pictures with one tripping of the shutter from five different angles. When these prints are restituted to the equivalent of five pictures taken from the vertical, an immense area is available for the topographer to work on.

Lieut. Hobson and Sergeant Brees returned to their home station on the same day their photographic work was accomplished.

MASTER SERGEANT H.J. BERTRAM RETIRES

War Department orders directed the retirement from active service on June 30th of Master Sergeant Herbert J. Bertram, 9th Airship Squadron, Scott Field, Ill.

A native of Chicago, Sergeant Bertram originally enlisted in the Signal Corps branch of the Army in 1907 at Columbus Barracks, Ohio, and completed thirty years of active service with the colors in June, 1936. During his first enlistment he was sent to Cuba for service in that island during its reconstruction days, and since then he has been stationed at many garrisons in the tropics and on the United States mainland.

On his return from Cuba, Sergeant Bertram spent the next several years on duty in New York harbor, having been stationed at the garrison on Bedloe's Island, which is the home of the Statue of Liberty. His service next found him in Asia, stationed in the Philippines and assigned to duty on deep sea cable ships engaged in laying and maintaining telegraph cables in the Pacific Ocean and the China Sea.

At the beginning of the War in 1917, Sergeant Bertram found himself assigned to the production of hydrogen gas for the Aviation Section of the Army. Ordered to Omaha, Nebraska, he was held there for the duration of the War. When all Army lighter-than-air activities were centralized at Scott Field in 1922, Sergeant Bertram was transferred to that post and has been stationed thereat ever since, save for short periods of detached service at the Army's gas production plants in Virginia, Texas and elsewhere.

Sergeant Bertram has been in active charge of the hydrogen and helium plant at Scott Field since his arrival there. A bronze plaque crediting him with the supervision and construction of the gas plant was installed at the direction of Colonel John A. Paegelow, former commandant of Scott Field. Since 1924, Sergeant Bertram has been with the 9th Airship Squadron.

On July 3rd the 9th Airship Squadron was scheduled to assemble to give him a testimonial dinner in the squadron barracks. The men of the Squadron purchased a suitable retirement gift to be presented him on that occasion by Major Neal Creighton, the squadron commander.

Sergeant Bertram has selected the vicinity of Scott Field as his future home and purchased a home near O'Fallon, Ill., where he and his wife are now living. For five years from July 5, 1928, he held a commission as Captain, Specialist Reserve.

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Brigadier General Delos C. Emmons, Air Corps, relieved from assignment with the 18th Composite Wing, Hawaiian Department, is to proceed to March Field, Calif., and assume command of the 1st Wing, GHQ A.F.

APPLAUSE FOR MAJOR HASTEY

Writing under date of June 10th, the News Letter Correspondent from Nichols Field, Rizal, P.I., states that on the eve of the departure for the United States on the July transport of Major Thomas W. Hastey, the personnel of Nichols Field expressly wish to record their chorus of applause for their Post Commander for the many and varied improvements affecting them made at that field under his administration.

"We do not want to concern ourselves in this article with all encompassing improvement projects undertaken and completed on the landing field, or of alterations to hangars, or of any such work of a strictly military nature," says the Correspondent. "We include in that classification the large irrigation ditch, a work of respectable proportions, dug to provide adequate drainage accommodations for the landing field, as well as those new garages with their conveniences, built to house the motor vehicles of the 66th Service Squadron. The new oil storage warehouse, the salvage warehouse, etc., unquestionably fall in the above classification.

It would seem that we, of Nichols Field, take the landscape gardening a bit too much for granted. The miles of seemingly always newly manicured shrubbery that hedges all our post roads; the close-cropped perpetually green lawns that carpet all approaches to every post building; the many flower plants that are never without that 'Flower Show' groomed appearance, all contribute to that opulent feeling of living in an exclusive residential district.

The majority of us here have seen the Post Theater as it was; a dingy theater, poorly equipped with inferior projection machines that were harnessed with a whispering sound apparatus that stole on the ear, and set up with rows of back-bone uncoupling shelving that served for seats for the unmarried enlisted personnel, transformed into the new Post Theater as it now stands; a modern little cine boasting of an excellent screen, faultless projection and sound reproduction, and an arrangement of decidedly improved seats.

Golfers on the post were unanimous in their well founded contention that the firing range bordering on their post course constituted a much too real human hazard during range practice. To remedy this situation, the target butts were torn down and rebuilt on the bombing range. The net result was a far superior pistol range in a safer location. At the same time, the removal of the old butts allowed for the expansion of the golfers' hunting grounds to the gratification of those who chase the little white ball round and round.

Partitions were being torn down and concrete broken up last week as preliminaries for the altogether new interior to be given the Post Signal and Radio building. A bright new and shiny two-position telephone switchboard (that ought to mean the best of 'hello' service for the post) stood ready for installation in its new home in the building. When post radio operators complained of third party interference by high power transmission lines near the building, linemen were called in and new poles were installed on a new route to take care of the lines out of harm's way.

Next door, the Sixth Photo personnel in their freshly redecorated offices and workshop, that might well serve as a model for any photo building in the military or commercial field, now have for their work every conceivable electrical wiring convenience. It would be 'house ideal' for the housewife forever wanting a new electric outlet for her gadgets.

Probably all of us walk in and out of the Post Exchange more frequently than in any other building on the post. Our PX is still undergoing a length and breadth overhauling that is resulting in a store as modern as any PX on any post.

Even the Guardhouse came in for its share of refinement. Extensive alterations were performed on its interior that increased its capacity and rectified poor ventilation and other unsatisfactory conditions.

A successful operation on our post water piping system cured our shower heads of their pressureless teasing trickle and gave us throughout the post needle point pressure.

And so we could go on enumerating a host of other improvements, even as extensive as a road straightening project that diverted the traffic from the front of our hangars, where it constituted a menace to safety, to the rear of them, but we won't, for it would merely tempt us to mention another and still another.

We cannot understand why some of our Army slangsters do not become as renowned as such ephemeral immortals as a Gene Buck, or a Bugs Baer, or a Rube Goldberg. We proudly acknowledge this quotation as coming from them, for it does seem to express better that we could hope to the thoughts of Nichols Field:

'We sure hate to think of Major Hastey as a short-timer
already sweating that canoe ride.'"

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Special Orders of the War Department announce the appointment, on June 22, 1936, under the provisions of an act of Congress approved June 16, 1936, of the following-named Captains of the Air Corps to the temporary rank of Major, from June 16, 1936, viz: William Seymour Gravely, James Thomas Curry, Jr., Howard Knox Ramey, and Oakley George Kelly.

BIOGRAPHIES

LIEUT. COLONEL DOUGLAS B. NETHERWOOD

One of the veteran pilots in the Army Air Corps, Lieut. Colonel Douglas B. Netherwood was born in Birmingham, Eng., February 4, 1885. Following his graduation in 1908 from the A. & M. College of Texas, with a degree of B.S. in Mechanical Engineering, he enlisted in the Army, serving as Private, Corporal and Sergeant with the 20th Company, Coast Artillery Corps, from July 31, 1908, to August 6, 1911. The following day he was commissioned a second lieutenant in that branch of the service. He was promoted to 1st Lieutenant, July 1, 1916; to Captain, May 15, 1917; to Major, July 1, 1920, and to Lieutenant Colonel, August 1, 1935. During the World War he held temporary rank as Major and Lieut. Colonel.

Detailed to the Aviation Section, Signal Corps, he completed his flying training at the Signal Corps Aviation School at San Diego, Calif., and received the rating of Junior Military Aviator. Three years later, on August 20, 1917, he was rated as Military Aviator.

Prior to the war, Col. Netherwood was on duty with the 1st Company, 2nd Aero Squadron, in the Philippines. Ordered to return to the United States, he was on duty in the Airplane Division, Office of the Chief Signal Officer, from Aug. 7, 1917, to November 10, 1917, and was then transferred to Love Field, Dallas, Texas. He was in command of this field until April 27, 1918. He had also assumed command of the Aviation Repair Depot at Love Field in March, 1918, and he continued in this capacity until March 29, 1921, when he was transferred to the San Antonio Air Depot for duty as Executive Officer.

From June 26, 1921, to February 17, 1922, Col. Netherwood was in command of the Air Depot at Americus, Ga. He was then assigned to duty in New York City with the Organized Reserves of the 2nd Corps Area. In February, 1925, he was assigned as student at the Army Industrial College and, following his graduation on June 30, 1925, pursued a two-year course at the Harvard Graduate School of Business Administration, being awarded the degree of Master in Business Administration.

Assigned to the Office of the Chief of the Air Corps, Washington, D.C., he was on duty in the Executive Office from July 7 to September 14, 1927, and for four years thereafter was Chief of the Finance Division.

From September, 1931, to June, 1932, Col. Netherwood was a student at the Air Corps Tactical School at Maxwell Field, Ala., and upon his graduation was ordered to duty in the Philippines, where he served as Department Air Officer, and later assumed the additional duty of Commanding Officer of Nichols Field and of the 4th Composite Group. Upon his return to the United States, he was on duty in the Plans Division, Office of the Chief of the Air Corps, from December 1, 1934, to July 16, 1935, when he was assigned as student at the Army War College. Following his graduation in June, 1936, he was assigned to his present duty as Assistant Director of the Air Corps Board at Maxwell Field, Ala.

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LIEUT. COLONEL LESLIE MacDILL

Lieut. Colonel Leslie MacDill, Air Corps, now serving a tour of duty as a member of the War Department General Staff, and a graduate of no less than six institutions of learning, was born February 19, 1889, at Monmouth, Ill.

Following his graduation in 1909 from Hanover College with an A.B. degree, and from the University of Indiana in 1911, with an A.M. degree, he was commissioned from civil life as a second lieutenant, Coast Artillery Corps, April 13, 1912. He served with the 6th Company, C.A.C., from May 28 to December 8, 1912, and with the 122nd Company, C.A.C., from December 10, 1912, until his detail in 1914 in the Aviation, Signal Corps. Upon the completion of his flying training at the Signal Corps Aviation School at San Diego, Calif., he was rated a Junior Military Aviator on July 2, 1915, which automatically advanced him to the rank of 1st Lieutenant. He was promoted to Captain, May 15, 1917; to Major, Air Service, July 1, 1920, and to Lieutenant Colonel, Air Corps, August 1, 1935.

Assigned to the 1st Aero Squadron, he served with this organization from July to November, 1915, and with the 1st Company, 2nd Aero Squadron, in the Philippine Department, from January, 1916, to May, 1917.

Upon his return to the United States, Col. MacDill was on temporary duty in the Office of the Chief Signal Officer, Washington, D.C., for a brief period, and was then ordered to duty overseas. From October 11, 1917, to May 16, 1918, he was on duty with Headquarters, Air Service, Lines of Communication, as Materiel Officer, Training Department. He was then assigned to the command of the Aerial Gunnery School at St. Jean de Monts, France, and he was responsible for the organization and building of this school.

Returning to the United States in February, 1919, he was assigned to duty in the Office of the Director of Air Service, Washington, D.C., in the Aerial Coast Defense Section, Operations Division, Training and Operations Group. In addition to this duty, he served as a member of the Advisory Board from July 28, 1920, to Sept. 26, 1920, when he was assigned to pursue a two-year course of instruction at the Massachusetts Institute of Technology, Cambridge, Mass. He graduated in June, 1922, with the degree of Doctor of Science, following which he was assigned to duty at McCook Field, Dayton, Ohio, as Assistant to the Commanding Officer. On June 18, 1923, he was assigned as Chief Engineer Officer of the Engineering Division, McCook Field, and, save for the period of one year, August, 1924, to July, 1925, when he was a student at the Command and General School at Fort Leavenworth, Kansas, he occupied this position continuously until December, 1929. He assumed the additional duty of Chief of the Procurement Section on September 12, 1927, following the removal of the Engineering Division from McCook Field to the new Wright Field and the changing of its designation to the Materiel Division. During the remainder of his stay at Wright Field, he served as Assistant to the Executive Officer, Materiel Division, and at various times was Acting Executive Officer.

On September 2, 1930, Col. MacDill reported for duty in the Office of the Chief of the Air Corps, and was assigned to the Plans Division. During the course of his duty in Washington, he served on various boards and committees.

Relieved from duty in the Office of the Chief of the Air Corps in the fall of 1933 to attend the Army War College, he graduated from this institution in June, 1934, and from the Naval War College, Newport, R.I., in June of the following year. He was then assigned to his present duty as a member of the War Department General Staff.

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CHANGE IN INSTRUCTORS AT KELLY FIELD

Captain John V. Hart, Air Corps, who recently arrived at Kelly Field, Texas, from the Hawaiian Department, where he was a temporary Major in command of the 72nd Bombardment Squadron, took over the duties of Chief of the Bombardment Section of the Advanced Flying School, relieving Captain Wallace E. Whitson, who is scheduled to leave Kelly Field on July 15th for Maxwell Field, Ala., where he will attend the Air Corps Tactical School.

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The new miniature bombing range at Kelly Field is gradually taking shape. It has now reached the height of the old hangar and has received considerable notice in the San Antonio press on the basis of its being the first permanent structure at Kelly Field since the inception of this field in 1917.

NINETEENTH BOMBARDMENT GROUP CELEBRATES

Swatting soft balls and breasting the surf were the principal activities of 30 officers and 300 enlisted men and their families of the 19th Bombardment Group on Wednesday, June 24th. The 19th, which is stationed at March Field, Calif., took a day off to observe its fourth anniversary at the Doheny Palisades, San Juan Capistrano, Calif.

The enlisted men defeated the officers by the close score of 10 to 9 in the soft ball contest. No record was kept of the amount of fish caught, but it is believed that they were few and far between. Swimming, both in fresh water and in the surf, was available for officers and enlisted men.

The trip was made through beautiful mountain and lake country via the Cleveland National Forest. The officers and men of the Group realized through this trip how very fortunate they were to be stationed in Southern California.

The 19th has been very busy since it observed its third anniversary last year at Coronado. The principal event of the past year was the movement of the entire Group to March Field in October from Rockwell Field, near San Diego. Though the officers and enlisted men lost many pleasant contacts through this movement, they have made many other friends in Riverside, San Bernardino and Los Angeles counties since coming to March Field.

The outstanding accomplishment of the past year was the successful conduct of navigation training. The Douglas YOA-5 Amphibian, assigned to March Field for the first half of 1935, was employed to teach air navigation of ocean missions to the officers of the Group. Several long flights, some over the water, demonstrated the ability of the Army Air Corps to operate off shore as well as inland.

The Group also participated in the San Joaquin Valley maneuvers in November, 1935, being stationed at Delano, Calif. Several planes were loaned to the Seventh Bombardment Group for their Florida exercises.

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MOVIE PRODUCER VISITS MARCH FIELD

Howard Hughes, producer of "Hell's Angels" and holder of many transcontinental air speed records, visited March Field on June 23rd for the purpose of conferring with his friend, Major Albert Hegenberger. He informed the News Letter Correspondent that he planned no speed flights for the immediate future, as the engine on his speed plane had been sent back to the factory for extensive alterations.

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Kelly Field, Texas, is in the throes of reorganization and all leaves were cancelled until a stabilized status quo is accomlished.

THE NEW AIR CORPS ACT

H.R. 11140, an Act to provide more effectively for the national defense by further increasing the effectiveness and efficiency of the Air Corps of the Army of the United States (Public -No. 785 - 74th Congress), approved June 24, 1936, reads as follows:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the authorized strength in airplanes, equipment, and accessories of the Army Air Corps established by the Act approved July 2, 1926 (44 Stat.780), is hereby increased to such numbers as will permit the Secretary of War to complete the equipment and organization and to maintain in the Army Air Corps the special Army air organization known as G.H.Q. Air Force, and our overseas defenses, together with a 25 per centum reserve for such forces, and to procure such other airplanes and equipment, including spare parts, supplies, and accessories, for such other purposes as are necessary to provide for the mission of the Army Air Corps: Provided, That of the increase authorized herein not to exceed two thousand three hundred and twenty serviceable airplanes, including equipment and accessories, are authorized to be obtained."

In the report of the Senate Military Affairs Committee accompanying H.R. 11140, it is stated that "This measure as passed by the House on April 20,1936, provided for increasing the present authorization of 1,800 serviceable airplanes to 4,000. The Committee on Military Affairs took this legislation up further with the War Department, receiving a report under date of May 26,1936. The Department advises that an increase in the present authorization to 4,000 planes is not in accord with the financial program of the President. However, the committee is further advised that if the bill is amended to provide for an increase of the present authorization to 2,320 planes the measure would be in accord with the President's program. The matter of increasing the authorized airplane strength has been under study on several different occasions since the fixing of the present authorization in the Air Corps Act of July 2, 1936. (44 Stat. 780). The so-called Drum Board, the War Department Special Committee on Army Air Corps, known as the Baker Board, and the Federal Aviation Commission, known as the Howell Commission, all concurred in recommending a minimum of 2,320 airplanes for the Army Air Corps. The Military Affairs Committee has accordingly amended H.R. 11140 to provide in effect that the authorized airplane strength shall be increased from 1,800 serviceable airplanes, to 2,320, including equipment and accessories."

In citing reasons for the proposed legislation, it is stated in the report:

'The first and most potent reason for the early enactment of this bill to increase our Army air force to a figure not exceeding 4,000 planes is the fact that it is necessary for adequate national defense. All great nations now have huge airplane carriers, which are in fact floating landing fields, to enable them to carry aerial warfare to enemy shores. They also have floating seaplanes and mother ships.

Only 30 tons of explosives were dropped on London in the World War, resulting in the loss of 1,800 lives, while today planes are constructed, any one of which can drop 10 tons of explosives. This situation was well emphasized by Col. C. de F. Chandler, United States Army (retired), in an article which appeared in the November 1934 issue of the United States Air Services, where he said:

'German seaplanes of existing types now alight on the South Atlantic Ocean between Africa and South America to moor astern of a station ship (S.S. Westphalian). This vessel is an ordinary merchant type, supplied with aviation fuel and other servicing facilities. Fuel and oil are transferred to the seaplane on the water. Meager reports mention experiments with a canvas ramp astern on which the seaplane may be hauled; also trials of canvas shelters for protection during refueling operations. The military significance of this commercial "mother ship" for seaplanes appears to have been ignored. As seaplanes become larger, their ability to alight safely on the ocean increases. Acknowledging only the existing sizes of seaplanes, it is rather startling to contemplate that small inexpensive merchant ships are capable of serving as ocean supply bases for trans-oceanic bombing planes.'

Mr. Igar Sikorsky, the eminent builder of large seaplanes, informed the Federal Aviation Commission (Oct. 10, 1934) that seaplanes are now in course of design that can transport 10 tons for a nonstop flight of 2,000 miles. A single seaplane of that type - which is a prospect for the immediate future - then could drop 10 tons of bombs on any American coastal city simply by prearranging a rendezvous with a small servicing vessel at sea a thousand miles from the coast line.

These facts strongly emphasize that our Nation is no longer protected from air attacks because of the wide extent of the Atlantic and Pacific Oceans, and we must govern ourselves accordingly. Here we desire to emphasize the thought that plans of this committee contemplate only safe and sane defense for the United States of America....

It should be recalled that, after the report of the Morrow Board, Congress authorized an increase of naval aircraft from 1,000 to 2,190, but left the Army authorization at 1,800. This substantial error which must now be corrected is well emphasized in a statement from Maj. Gen. Oscar Westover, Chief of the Army Air Corps, published on March 15, 1936, which reads in part as follows:

'The dominant characteristics of military aircraft are tactical and strategical mobility and striking power. That aircraft will play an important part in any war of the future is incontestable. (Continued on Page 19).

Q. What policy has controlled the selection of locations for new Air Corps stations for tactical units, especially in the continental United States?

A. With few exceptions, the permanent Air Corps stations have been built at the sites selected during the World War for temporary aviation activities. These war-time sites were selected under the urgency which characterized most of the aviation measures of the War. So far as can be found, no written policy governed these selections. An examination of the records of that time indicates that two dominant considerations affected the choice of aviation sites; first, political pressure; and, second, good year-round climate.

No evidence can be found to indicate that any consideration was given to strategical and tactical requirements involved in an air defense of the continental United States. It is doubtful whether such an idea as an attack by air upon the continental United States was entertained at that time.

Since the land acquired during the war for aviation purposes belonged to the United States, it apparently has been largely a matter of expediency to construct the majority of the existing permanent Air Corps stations upon such land. Barksdale Field at Shreveport, La., and Hamilton Field at San Rafael, Calif., are outstanding exceptions.

The Barksdale Field site was selected by a board of officers after considerable study and the review of the report of a previous board appointed for the same purpose. It was selected to accommodate the Attack Group, at that time stationed at an unsuitable Coast Artillery station, Fort Crockett, Texas, where the size of the flying field was entirely inadequate and the terrain was unsuitable for expansion. It was only after the site at Shreveport had been selected that the War Dept. decided to build the station to house a Pursuit Group, in addition to the Attack Group.

The location of a Wing station on the southern border at Shreveport, La., serves the strategic defense of that border and, at the same time, places an important component of the GHQ Air Force in a location where it can rapidly concentrate with other Air Force units on either coast of the continental United States.

The selection of the Hamilton Field site was also made by a board of officers, pursuant to a plan of the War Department to have a station for Bombardment Aviation on the West Coast. The 7th Bombardment Group, now at Hamilton Field, was stationed at March Field until its new station was completed. Hamilton Field is located in an area of undoubted strategic importance.

As the speed of airplanes increases, the amount of warning of impending attacks decreases and, from a tactical standpoint, the location of permanent stations for air units should be such as to favor the establishment of an adequate aircraft warning system. Such a system should be of sufficient extent and density of observation stations to afford ample warning of attack to enable getting airplanes into the air before the attack opens.

This consideration and the selection of sites for future air stations in areas where attacks are most probable were written into the new "Air Base" legislation, approved by the President, August 12, 1935. Under this law, the War Department appointed a special committee to study the needs for new air stations and depots, as well as the expansion of existing facilities. It may, therefore, be expected that sites for permanent air stations which are selected in the future will conform to the policy expressed in the law above referred to, and that new air bases will be located in the most important strategic areas of the continental United States, based upon consideration of prompt and effective defense against air attacks.

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OFFICERS RETURNING FROM FOREIGN SERVICE

The following-named Air Corps officers, upon the completion of their tour of duty in the Hawaiian Department, are assigned to stations in the United States as indicated below:

To Wright Field, Dayton, Ohio: Captain Signa A. Gilkey and 1st Lieut. Russell Keillor.

To Barksdale Field, La.: 1st Lieuts. Bryant L. Boatner and Richard H. Lee, for duty with GHQ Air Force.

To Brooks Field, Texas: 1st Lieut. William J. Clinch, Jr., for duty with 12th Observation Group.

To Langley Field, Va.: 1st Lieut. John W. Egan, with Flight "A," 16th Observation Squadron; 1st Lieuts. Ford J. Lauer and Curtis E. LeMay, with 2nd Wing, GHQ Air Force.

To Selfridge Field, Mich.: 1st Lieut. John N. Stone for duty with GHQ Air Force.

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Special Orders of the War Department, recently issued, assign Colonel Henry B. Clagett, Air Corps, to duty at Selfridge Field, Mt. Clemens, Mich., to assume command of the First Pursuit Group at that station.

GRADUATION EXERCISES AT AIR CORPS TECHNICAL SCHOOL

A total of 33 officers graduated from a ten-months' course of instruction at the Air Corps Technical School, Chanute Field, Rantoul, Ill., on Tuesday morning, June 30th. General Oscar Westover, Chief of the Air Corps, flew from Washington the previous day to be present at the commencement exercises and to deliver an address to the graduating class.

Colonel Junius W. Jones, Commandant of the Technical School, who gave the introductory address, stated in part:

"We have reached the end of another scholastic year, which has been a very successful one. There have been many changes made to improve the school, and they are only the beginning of what we hope to do in the future."

In introducing General Westover, Col. Jones said: "This is the first time the Chief of the Air Corps has been present to present diplomas to a graduating class at Chanute Field. I am very thankful to the General for taking the time away from his arduous tasks to be present."

General Westover's address was, in substance, as follows:

"Although it required a special effort on my part to be present on this occasion, I am happy, indeed, that I am able to extend in person my congratulations upon the successful completion of the course of instruction at the Air Corps Technical School. This School, because of the instruction imparted here, is of vital importance to the welfare and success of the whole Air Corps.

When we live very close to an activity it is difficult for us to see it in perspective. Perhaps an illustration taken from another field of endeavor will serve to illustrate the progress made in aviation more forcibly than an example taken from our own field.

Public attention recently has been directed to the Atlantic crossings of the "Queen Mary." This wonderful vessel provides a four-day crossing of the Atlantic under conditions of comfort and luxury which can scarcely be equalled in the finest hotel on land. The cost of such a crossing for the vessel as a whole is estimated by "FORTUNE" to be $195,000. We may contrast this with a crossing of the Atlantic in the era of sailing vessels, when the crossing required from a month to six weeks, or more, and the conditions under which passengers made the trip were of the most Spartan character, with no luxuries and few, if any, comforts. On the other hand, the cost of such a crossing for the sailing vessel was a mere fraction of the $195,000 for the "Queen Mary."

Compared with the length of time ocean transportation has been under development, aviation may be said to be, at present, in its "sailing era." On the other hand, the gap between the first and the present-day airplanes is, in some respects, as wide as that between the sailing vessel and the "Queen Mary."

The ever increasing complexity of aircraft and their equipment has made the operating and maintenance problems increasingly serious. The solution of these problems in the Air Corps will be, in large part, the responsibility of you graduates during your forthcoming service.

In addition to the highly trained ground personnel required for the maintenance of military aircraft, a crew, corresponding in many respects to the crew of a complex surface vessel, will be required to operate in flight the new large Bombardment airplanes. Part of this crew will consist of enlisted men who are trained as radio operators, aircraft gunners and engineers.

An analysis of the requirements of the Air Corps for trained enlisted specialists shows that the 16,000 enlisted men now authorized should be trained approximately as follows: One-half, or 8,000 as airplane mechanics; fifteen percent, or 2,400, as radio repairmen and operators; twelve percent, or 1,900, as aircraft armorers; and the remainder divided among welders, sheet-metal workers, machinists, parachute riggers, photographic and instrument repairmen and miscellaneous.

It is estimated that there is an average of 2,400 original enlistments in the Air Corps each year. If all of these new men were given specialized training at the Technical School prior to assignment to Air Corps units, the capacity of the school would have to be quadrupled. It is readily apparent that the training of approximately 600 enlisted men annually, the maximum number that can be trained with the present facilities, does not meet the requirement of the service for trained specialists and that a large part of the required number of men must be trained in the tactical units.

Estimates for construction of a new plant for the Technical School have been based on the training of 1200 enlisted men and 50 officers annually. A recent study by the Air Corps Board shows that the Air Corps should have 30,765 enlisted men when the authorized 2320 airplanes are obtained. When that point is reached the number of specialists required will be almost double that required now. Contrasted with this requirement, it is interesting to note that during the past six years, 244 officers and 2654 enlisted men have graduated from the Air Corps Technical School.

Your course here has undoubtedly impressed upon you that the Air Corps has found it necessary to specialize. Accordingly, this school has specialized and you will carry out into the service the benefits of the specialized knowledge you have obtained here. Efficient organization makes it undesirable, even if it were possible, to have any one man in an organization responsible for the maintenance of armament, engines, airplanes, radio, and photographic equipment. Due to the scope of these various categories of maintenance, better results are obtained by having experts who concentrate upon each of these categories.

This system has been the basis of the organization and curriculum of the Technical School, and during your course here you have had an opportunity to profit by the benefits of this system.

The organization of a school upon this basis enables the concentration of highly qualified officers of experience in each of these specialities for the purpose of imparting instructions in their specialties. Such a concentration of talent would be quite impossible to secure, even in the larger Air Corps stations. Furthermore, officers in the tactical organizations having this specialized knowledge are absorbed in the duties incident to operation and are unable to apply themselves to the task of imparting methodical, intensive instruction in the way it is possible to do in this school.

The inclusion of all these specialties in a single school affords the advantage of interchange of ideas and methods, and the co-relation of these activities from the theoretical standpoint in a way that would be quite unlikely to be attained under the stress of operation in a tactical organization. All these advantages have been clearly demonstrated during the years this school has been in operation. As each succeeding class goes out into the service, the cumulative benefits of accurate and scientific knowledge are evidenced by more efficient maintenance in the tactical units.

It is hoped that you will all feel that your education does not cease with your graduation here. The school of practical experience has ever been a valuable one, teaching its own particular lessons, which are equally valuable with those to be derived from study and practice in the classroom and laboratory. It is impossible to cover in school all the various problems which your subsequent service will present. It is hoped that you will all be ever alert to gain from your forthcoming practical experience new ideas for the improvement of the maintenance and inspection of Air Corps equipment and materials.

I know that you are all interested in the future of this school. I can assure you that I am, also, and that the War Department is very desirous of placing this school in permanent buildings. . . . I believe the next Congress may provide for this.

In closing, I desire to congratulate all of you who are graduating, and to express my appreciation to the Commandant and faculty for their efficient and essential contribution to the knowledge you have obtained in this school."

The graduates of the Technical School are listed below, as follows:

Photographic course:
Captain William O. Eareckson, Lieuts. Earl T. MacArthur, Jr., William M. Prince.

Communications Course:
Lieuts. Louie P. Turner, Frederick A. Pillet, Edwin L. Tucker, George F. Kinzie, William E. Karnes, Fred S. Stocks, John H. Bundy, Stuart P. Wright, Minthorne W. Reed, Richard H. Wise, Joe W. Kelly, Thomas C. Darcy.

Engineering Course:
Lieuts. William T. Hefley, Eugene H. Rice, Herbert L. Grills, Oliver S. Picher, Carl R. Feldmann, George F. Schlatter, Clark N. Piper, Wiley D. Ganey, Daniel F. Callahan, Joseph F. Carroll, Jr., Hilbert F. Muenter, Air Corps; Captains Thomas D. Lane, Harrison W. Wellman, Jr., Lieuts. Roy T. Bankard, William G. Catron, John A. Hawkins, Kenneth R. Case, Lester C. Holtan, National Guard.

Shortly following the commencement exercises, General Westover took off for the return flight to Washington.

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TEXAS FLOODS PHOTOGRAPHED

Lieut. Charles F. Densford and Staff Sergeant Coy, Air Corps, stationed at Kelly Field, Texas, in a photographic mission on July 3rd, took fifty exposures of the Texas floods for Representative Bob Kleberg. They started in at New Braunfels, followed the Guadalupe River to Seguin, Gonzales, Cuero and Victoria, then to Three Rivers where the Atascosa, Frio and Nueces Rivers converge. The total flying time for the mission was three hours and twenty minutes.

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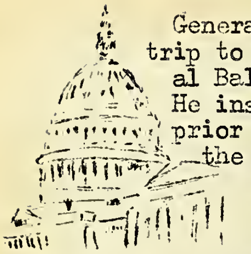
SHARP SHOOTING BY LIEUT. DENSFORD

Lieut. Charles F. Densford, of Kelly Field, recently competed in the Michigan State Pistol Matches at Detroit. The well known pistol expert won two first places, one second place and one third place. He placed second in the Michigan State Championship and won first place in aggregate of individual matches. The revolver used by Lieut. Densford in the matches was a Colt's officers' model, .38 caliber.

WASHINGTON OFFICE NOTES



General Westover on his recent trip to the West visited the National Balloon Races at Denver, Colo. He inspected all of the balloons prior to the take-off and examined the arrangements made by the Operations Officer for the race, Major William J. Flood, Air Corps. General Westover expressed himself as being very much impressed with the splendid conduct of all features pertaining to the race. He stated that the novel start by moonlight and with searchlights playing on the balloons made the spectacle an extremely entertaining one.

Upon learning of the crash and the burning of the Army entry, piloted by Captain Haynie McCormick, with 1st Lieut. John A. Tarro as aide, General Westover flew out to the reported site of the crash and found the country to be excessively rugged and the depression in which the Army balloon dropped covered with a dense growth of scrub pine. It was probably these difficult conditions that caused the drop of the Army balloon under the force of a down current of air to result disastrously.

Lieut. Colonel Harry H. Young reported for duty in the War Plans and Training Division.

Returning to duty from leaves of absence were Lieut. Colonel Vincent B. Dixon and Captain Robert V. Laughlin.

Officers who recently departed on leaves of absence were Lieut. Colonel R.M. Jones, prior to taking up his new duties at Kelly Field, Texas; Lieut. Colonel Gerald E. Brower, Majors R.C.W. Blessley, Alfred W. Marriner, and Captain Morton H. McKinnon.

On July 7th, Colonel Frederick L. Martin, Lieut. Colonel Arnold N. Krogstad, Major Lawrence P. Hickey and Captain John W. Monahan reported for temporary duty in the Office, Chief of the Air Corps.

Major Harlan W. Holden left for his new duties at the Air Corps Tactical School at Maxwell Field, Ala.

Lieut. Colonel William E. Lynd left on a cross-country flight to Maxwell Field, Ala., for conference with the Air Corps Board.

Recent visitors to the Chief's Office were Lieut. Colonel Walter H. Frank from Mitchel Field and, during the course of extended navigation flights, Major Leo H. Dawson from Selfridge Field and Captain August W. Kissner from Kelly Field.

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When General Westover was at Chanute Field on the occasion of the graduation exercises at the Air Corps Tactical School, he made a thorough tour of inspection of the post. It was reported that the highest temperature in many years made the inspection considerably discomforting, the mercury soaring around 105.

ARMY AVIATION HEROES OF THE PAST

By Pvt. A.L. Valentine, 7th Bomb. Group Hqrs.

Do you remember the Three Musketeers when they were at the heighth of their glory several years ago - Lieuts. John J. Williams, Irvin A. Woodring and William L. Cornelius? Famous throughout the Air Corps for their daring and courage, for several years these three performed before the world. In the 7th Bombardment Group, in the old 17th Pursuit Group, now redesignated Attack, and especially in the 95th Attack Squadron, their names are spoken of affectionately and sort of reverently, for they helped to form the traditions of the Air Corps. Wherever they went they were called upon to personify that branch of the military service, and at each place they left behind them glowing accounts of their daring.

On September 10, 1928, almost eight years ago, the first of the Musketeers fell from the skies. Lieut. "Johnny" Williams, leader of the three, while performing aerial acrobatics during the Air Races at Mines Field, Los Angeles, crashed to earth and was killed almost instantly. Despite their comrade's untimely death, Lieuts. Woodring and Cornelius carried on. Colonel Charles A. Lindbergh volunteered his services, and the show continued.

Even then it was written that another of their number was to die. Two weeks later in a midair crash with Lieut. Roger V. Williams at Rockwell Field, Lieut. Cornelius was killed while Lieut. Williams escaped with the aid of his parachute. Now there remained one Musketeer - Lieut. Woodring. He carried on alone until in April of 1930, and at that time, during maneuvers at Mather Field, he narrowly missed death when his ship became uncontrollable and he was forced to jump. He was performing in aerial combat with the late Captain H.M. Elmendorf, Squadron Commander of the 95th, zooming and diving, chasing each other through the skies for the benefit of a few thousand spectators who had come to witness the giant spectacle of the Army Air Corps Maneuvers. While his ship was falling, and Lieut. Woodring was bailing out, Lieut. Hayden P. Roberts, flying a transmitting plane a short distance away, watched Lieut. Woodring jump, drew a sketch of the field and marked the spot where pilot and ship landed. This was immediately transmitted to the ground station by means of the Westinghouse electrical invention which was being tested by the Army at that time.

A few months later, Tuesday, October 28, 1930, Lieut. Woodring with Lieut. Caldwell were ordered to Vancouver, B.C., where they received the Japanese ratification of the London Naval Treaty which was to be taken to New York, transferred to the steamship LEVIATHAN and dispatched to London. While flying through Wyoming, the two messengers encountered severe snow storms. They became separated, and Lieut. Caldwell crashed. Several days later he was found. The remains of his ship were scattered over a wide area. Lieut. Woodring remained in Laramie, Wyoming, overnight and resumed his journey to New York the next morning with the precious document. It was not until he had reached his destination that he learned of Lieut. Caldwell's death. Sometime later, Lieut. Woodring was decorated with the

(Continued on Page 20).

The Caterpillar Club

With the close of business on June 30th, 803 names were entered on the register of the mythical Caterpillar Club, that exclusive organization of airmen and airwomen wherein life-time membership becomes automatic immediately following an emergency parachute jump.

Supplementing the above mentioned 803 jumps are 38 repeater jumps, made by various members of the Club, thus increasing to 841 the total number of emergency parachute jumps made by American flyers since July 21, 1919, when the two men who head the Caterpillar Club roster miraculously escaped via the parachute from a burning airship flying over the Chicago business district.

At the end of the calendar year 1935, there were 760 names on the register. It will, therefore, be noted that during the first six months of the present calendar year there were 43 more initiations into the Mystic Order of Caterpillars. The only member of the Order to receive his second degree this year is Major Byron E. Gates, Caterpillar No. 101, whose first initiation occurred on August 9, 1928, when he was a first lieutenant.

During the first six months of the calendar year 1935, the number of emergency parachute jumps totalled 29. No explanation can be offered for the increase in the number of jumps so far this year, except to say that accidents simply will happen.

The names added to the Caterpillar Club roster since January 1, 1936, are given below, as follows:

No.	Date		Name	Rank	Place of Jump
	1936				
761	January	11	George L. Brown	Private, Air Corps	March Field, Calif.
762	January	22	Frederick G. Huish	Flying Cadet, Air Corps	Randolph Field, Texas
763	January	24	Thomas E. Lanigan	Private, Air Corps	Near Ford Island, T.H.
764	January	24	Charles E. Fisher	2nd Lieut., Air Reserve	Near Ford Island, T.H.
765	February	7	W. A. Trembly	Flying Cadet, Air Corps	Near New Braunfels, Texas
766	February	12	Otto C. George	Captain, Air Corps	Near Stonewall, Ga.
767	February	12	Robin B. Epler	1st Lieut. Air Corps	Near Stonewall, Ga.
768	February	12	George Russell	Sergeant, Air Corps	Near Stonewall, Ga.
769	February	12	Harry McHayes	Sergeant, Air Corps	Near Stonewall, Ga.
770	February	14	Harry N. Burkhalter	2nd Lieut. Air Corps	Fulton, Arkansas
771	February	14	W. K. Durham	Private, Q.M. Corps	Near Mansfield, La.
772	February	18	W. J. Kliffel	Sergeant, Air Corps	Near Sourlake, Texas
773	February	27	George F. Rice	Lieut. (JG) U.S. Navy	Near Pensacola, Fla.
774	March	14	Edgar R. Camp	Lieut. Air Corps	Near Lawn, Pa.
775	March	17	James W. LaCompte	Mechanic U.S. Navy	10 Miles W. Point Loma, Calif.
776	March	20	Carlton F. Bond	Major, Air Corps	Nacogodoches, Texas.
777	March	21	William M. McAvoy	Civilian	Langley Field, Va.
778	March	21	John Wheatly	Civilian	Langley Field, Va.
779	March	29	Benjamin W. Chidlaw	Captain, Air Corps	Near Crestview, Fla.
780	March	29	John L. Hammack	Private, Air Corps	Near Crestview, Fla.
781	April	9	J. W. Hinton	2nd Lieut. Air Reserve	Near Coushatta, La.
782	April	9	Maurice M. Simons	2nd Lieut. Air Corps	Near St. Hedwig, Texas.
783	April	12	J. A. Philpott	Flying Cadet, Air Corps	Mather Field, Calif.
784	April	21	Walter E. Todd	Captain, Air Corps	Near San Diego, Calif.
785	April	29	Frank J. Bennett	2nd Lieut. Air Reserve	Spring Garden, Va.
786	April	30	Harlan T. McCormick	Major, Air Corps	Elizabeth, Indiana
787	May	8	Leon E. Sharon	Captain, Air Corps	Kewanee, Miss.
788	May	8	Malcolm F. Lindsey	Major, Infantry	Kewanee, Miss.
789	May	11	James L. Bledsoe	Flying Cadet, Air Corps	Near Hondo, Texas.
790	May	12	Nelson R. Turner	Private, Air Corps	Near Penonome, Panama
791	May	12	William A. Knight	Staff Sgt. Air Corps	Near Penonome, Panama
792	May	12	Donald W. Benner	Captain, Air Corps	Near Penonome, Panama
793	May	23	J. L. Malone	Civilian Test Pilot	Dayton, Ohio
794	May	27	John E. Albert	1st Lieut. Air Reserve	Sycamore, Ohio
795	May	27	Will W. McConnell	1st Lieut. Air Reserve	Sycamore, Ohio
796	May	27	Edgar L. Carlisle	1st Lt. Pa.Nat'l Guard	Brookville, Pa.
797	May	19	Douglas W. Smith	Flying Cadet, Air Corps	Near March Field, Calif.

No.	Date	Name	Rank	Place of Jump
798	May 27	Claude L. Craven	Lt. Pa. Nat'l Guard	Brookville, Pa.
799	June 4	Charles E. Robbins	Private, Air Corps	40 miles NW Medford, Ore.
101	June 4	*Byron E. Gates	Major, Air Corps	40 miles NW Medford, Ore.
800	June 6	Percy G. Smith	Staff Sergeant, Air Corps	Syosset, L.I., New York
801	June 6	Dalene Bailey	Flying Cadet, Air Corps	Syosset, L.I., New York
802	June 7	William B. Wright	Lieut. Col. Air Corps	Town Hill, Md.
803	June 22	Charles Edward Robertson	Lieut. (JG) U.S. Navy	Pensacola, Gla.

*Second emergency parachute jump.

In the various reports submitted by Caterpillar Club members, reciting their experience while undergoing initiation, most of them stated that their feelings and reactions were normal throughout the incident.

Captain Chidlaw asserted that, after he felt assured that his mechanic, whom he had ordered to jump, had gone about that business in approved style, his feelings were more of annoyance that such an event had to happen rather than any feelings of fear or apprehension either because of the fire or because of the necessity for jumping.

When Lieut. Hinton prepared to jump from his airplane due to the overheating of the engine and there being no suitable place on which to land, his first attempt to dive overboard was frustrated when his feet slipped in the oil which had accumulated in the cockpit. He then grabbed both sides of the door of his Pursuit ship, put his left foot on the seat, the other foot against the instrument panel, and dived out through the door. After completely clearing the aircraft, he reached down and pulled the rip cord. "It didn't come out the first time," he said. "All this time I had no sensation of falling. The second time I pulled the rip cord I was very much surprised at how quickly the parachute opened. The ground did not appear to be coming up fast, but I saw that I was drifting backwards and that I was going to land in the top of some tall pine trees. I then slipped the chute so that I could land in an open field off to one side. I was surprised to see how easily the parachute could be slipped."

Flying Cadet J.A. Phillpot "fell into" a Caterpillar Club membership during the course of record bombing at Mather Field, Calif. Seated in a B-12 Bomber and trying to observe the flight of a bomb - there being no window for observation in this ship and observation has to be made by leaning out through the bomb bay - the plane hit a slight bump, causing him to be thrown off his balance. With a scoreboard in one hand and a microphone in the other, he was unable to catch himself and he started earthward slightly behind the released bomb. The embarrassed observer yanked the rip cord and afterwards stated that, while he was very much surprised, he felt no ill effects at any time.

Flying over Elizabeth, Indiana, at an altitude of 2200 feet, the breaking of the propeller caused his Pursuit ship to vibrate so violently that Major McCormick was partially stunned when the windshield struck him on the head. When he recovered sufficiently, he cut the switches and got the airplane under control at approximately 1,000 feet altitude. Despite the fact that the switches were cut, the engine did not stop, due no doubt to the "ground" being pulled loose because of the violent vibration. Fragments of the disintegrating engine and ring cowling were flying in all directions. Opening the door on the left side of the fuselage, Major McCormick attempted to crawl out, reaching for the flying wire to get sufficiently far from the fuselage to clear the tail surfaces. However, he either slipped or the ship gave a sudden lurch which threw him half way out of the right side of the fuselage. Realizing that he was getting quite low to the ground and that he did not have time again to get into the cockpit and level off the ship, he shoved himself as far down to the right as he could, and left the ship headfirst. His shoulder struck the tip of the stabilizer, but not sufficiently hard to injure him. The parachute opened satisfactorily, but the risers caught him around the neck and choked off his wind. His head imprisoned between the risers, he was forced to look upward until within approximately 300 feet from the ground when, after a great effort, he succeeded in extricating his head from the twisted risers. By spilling the chute he was able to avoid a heavily wooded section and landed safely in a small clearing.

Following the breaking of the oil line in his Attack plane, when the motor froze and the front cylinder let go, causing a great cloud of white smoke, oil, etc., to issue forth, Captain Leon E. Sharon, flying at an altitude of about 2500 feet, saw no place where he could reasonably expect to get away with a landing. He informed his passenger, Major Malcolm F. Lindsey, Infantry, to jump.

Major Lindsey had some very trying moments before he finally cleared the plane. Unfastening his safety belt and starting to climb out of the cockpit, the belt caught on the parachute, and some time was lost in getting it loose. As he again attempted to crawl over the side of the cockpit, the parachute caught on the side and another delay was caused. After this delay he crawled down the side of the plane, hung by the step with his left hand, caught hold of the rip cord ring with his right and then let go. Knowing that the plane was wired for radio, Major Lindsey thought it best to climb down under the plane so as to clear these wires. He states that his feelings and reactions during and immediately after the jump were few, as the parachute opened almost instantly. He recalls wondering whether the parachute would open, but was snapped up so short and quickly by the parachute that his jumping and sudden stop seemed almost coincident.

Captain Sharon stated that it all happened so quickly, the parachute opening instantly, that he had no time for anything but to wonder whether he was going to miss the trees immediately under him on land in a small cotton patch. A current of wind came to his rescue and swung him over into a soft plowed field. His chute caught in the edge of the trees. He was greatly concerned about Major Lindsey and located him half an hour later. Their feelings of relief were mutual.

Fate was exceedingly kind to Sergeant Percy G. Smith, who joined the Caterpillar Club without going through the necessary formality of yanking the rip cord of his parachute. Sitting in the navigator's compartment of a bombing plane, he was ordered by the pilot, Flying Cadet Dalene Bailey, to "bail out" when the left engine went dead, causing the plane to go out of control in a flat spin.

Forcing himself out of the cockpit and going overboard, Sergeant Smith was knocked unconscious when he struck the left aileron. He does not remember how long he was unconscious, but when he came to the parachute was open and he was about 6,000 feet from the ground, heading for it in an easy descent. Because of previous experience in practice parachute jumps, his feelings and reactions were normal. To his great surprise he found that the parachute rip cord handle was still in its pocket. The rip cord housing was broken and was evidently pulled apart when he hit the wing, causing the parachute to open.

Cadet Bailey stayed with the plane in a vain attempt to regain control until it was down to about 2,000 feet, and then made his exit via parachute.

In his official report on his parachute jump from an A-12 airplane, piloted by the late 1st Lieut. Lawrence C. Westley, Sergeant William Kliffel very vividly gives his impressions while undergoing initiation into the Caterpillar Club. A knock had developed in the engine, and while they were over a wooded terrain the knock reached a critical point of detonation. The vibration of the ship was extreme.

The plane was losing altitude and the pilot gestured to Sergeant Kliffel to jump.

"Fear or nervousness was undoubtedly present for some time before the jump," Sergeant Kliffel stated. "I noted a dryness in the mouth. I also recall a burning sensation in the chest when I first definitely knew that I was expected to bail out. It seemed like a cold-blooded proposition. I dreaded it. I had a fear of being struck by the tail group, particularly the stabilizer. On previous flights I had often noted its unfavorable position in reference to a man attempting to clear himself. A propelling thrust would be needed to effect satisfactory clearance. When our difficulty first made itself known, I recalled a conversation which had taken place some time before, between myself and others, in which it was decided that clearance could be effected with safety if the jumper mounted the lower stirrup, fell backward in an arc of which the foot was the center, and thrusting himself away from the fuselage with the strength of his arms and shoulders. This method, however, was closed to me by the press of the emergency.

At this time I was under the impression that the pilot too would come. I had a sense of gratitude for the break he was giving me in holding the ship, but I wanted him to get out. I felt that he was taking too great a risk for someone else. I knew I could get out somehow without his help. But he didn't move. All this time (possibly two or three seconds) I was working myself over the side. I wanted to give him as good a break as he was giving me. I hurried. I knocked my goggles off. They were banging on my neck. My reasoning power at this point was uncanny and far superior to my normal average both in speed and accuracy. I was practically ready - the wind tore me loose.

My first sensation was one of spinning head down. This may have been an illusion. But I couldn't focus my eyes on anything. There was nothing there except streaks. I'd seen jumpers tumbling end over end. I didn't think I was doing that. I wondered if I'd foul my chute. I wondered who packed it. I was definitely not afraid at this time. I felt like a man who had taken a definite step in an unknown direction and waited for the results in some curiosity. I knew I should wait for an instant before pulling the rip cord. I reached for it and couldn't readily locate it. I wondered if I could see my hand if I held it before my eyes. I could. The ripcord handle was in it. The cable was dangling. I felt silly for some unknown reason, as though I hadn't done it properly. I was becoming interested again. I wondered if I'd make it. I could feel a positive friction under my seat. It made me feel good. I knew the chute was working - that it was pulling out. I wished I could see what was happening. I could feel a tugging, and it was gentle. This wasn't bad. I had a sensation of bouncing as though I were on a rubber band. I felt a sharp pain between the legs. That didn't matter either. My reasoning power was gone. Things were happening too fast. I could not think them out. They were just pictures, but very, very clear. I saw the earth once in a while. It looked like I was still spinning. My feet were down now, though. It seemed like the whole parachute was spinning. I was able to reason this out. I decided the canopy was steady but that the shroud lines were swinging in a circle with me. I saw some buildings in the distance. I remembered the airplane. I wanted to see it. I wondered about the pilot. I wondered if he made it. I saw the airplane. I could see the pilot now. His head and shoulders were above the outline of the ship. Things were getting steady now. The pilot was standing up.

I was dropping in the woods. I was suddenly afraid. I was falling too fast. The trees were reaching for me. I could see the black limbs. I grabbed my shroud lines and pulled them. One tree was almost in my way. I pulled harder. I fell faster. I missed the tree. I saw it pass. I was falling backward. I looked and saw another one coming. I couldn't miss it. I crashed. I fell through the limbs. I landed on the ground. I was flat on my back. My foot hurt and I wondered if it was broke. I was afraid to find out. Everything was suddenly very still. It was a relief. I remembered that there never had been any noise. It was something in my head. At this period, either during or after my landing, I have a distinct recollection of hearing the airplane crash to the ground, but I can't place it in proper sequence. I got up. My foot hurt. I walked away. Something stopped me - my harness. I took it off. My chute was draped in the tree. I left it as a landmark. I called Westley. I wondered if he made it. I could think better now. I was out of the woods and looked all around. I saw something white in the west. I thought it was an oil tank. I watched it and it seemed to move. It was a long ways off. It was a parachute. It was Westley. He was hurt, otherwise he'd be up and the chute would be collapsed.

I ran. I was in a bog. It was deep. The water was cold. My foot hurt worse. I could barely breathe. I saw a man on a horse. He stopped by the parachute. Then some more men on foot, then another man on a horse. One horse went away with two men on its back. I shouted for them to collapse the chute. They couldn't hear me. They couldn't even see me. I was all in. Now they were spilling the chute. Now they saw me. They were putting me on a horse. I couldn't mount. They told me the pilot was dead."

Since the foregoing compilation of the Caterpillar Club roster was prepared, a newspaper account of the initiation of two more members on the last day of the Fiscal Year, June 30th, has raised the total number of names on the roster to 805, and the total number of jumps to 843. While flying near Bocas del Toro, Republic of Panama, Lieut. Isaac W. Ott and Private John Komdat, Air Corps, took to their chutes and escaped from a bombing plane which caught fire following the breaking of a connecting rod in one of the engines.

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TC-13 AIRSHIP ENCOUNTERS DIFFICULTIES

On the return flight to Moffett Field, Calif. following a visit to March Field recently, the Army Airship TC-13 ripped its upper fin during stormy weather off Point Conception in the Pacific Ocean. The airship flew back to March Field, waited until the storm abated and then flew the course successfully to Moffett Field. The trip was part of its regular seacoast patrol.

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When the new class at Randolph Field reported to the Commandant on June 29th, five young men from Southern California were among the assembled embryo pilots. One, Private Vernon Plane, was mentioned in a previous issue of the News Letter. The four civilians in the group were Guy L. Hudson, Los Angeles; George L. Robinson, Corona; Frederick L. Moore, Fillmore, and Paul L. Laurence from Palms. It is hoped, says the News Letter Correspondent, that these five young men will all live up to the good records made by their Southern California predecessors at the West Point of the Air.

CHANGES IN RANK AMONG KELLY FIELD OFFICERS

There were many upsets at Kelly Field, Texas, as a result of the new legislation recently enacted affecting temporary rank. Six field officers continuing in their temporary grade are Majors R.N. Ott, L.N. Eller, C.C. Nutt, James A. Healy, R.D. Knapp and M.R. Woodward. The News Letter Correspondent states that several of the junior officers were particularly affected through the loss of their captaincies, in view of the fact that the loss in grade came just at the time when they would begin to get pay for the grade.

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CAPTAIN ANDERSON NOSES OVER IN LANDING

Captain Orvil A. Anderson, Air Corps, was the victim of a minor accident at Kelly Field on the morning of June 28th. The accident occurred as he was coming down through heavy clouds after making the daily weather flight. His O-25A Observation plane developed engine trouble as it came out of the clouds at 400 feet altitude. Having very little space to maneuver in, he was forced to land in an adjacent corn field. As an additional complication, it had just rained considerably, and the plane immediately nosed up, broke its landing gear, lower wings, and bent the propeller. Captain Anderson escaped injury and his meteorological instruments were not damaged.

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MISHAPS DO NOT COME SINGLY

Captain E. T. Selzer, Air Corps, flew to the Air Corps Technical School, Chanute Field, Ill., recently in the Kelly Field C-24 Transport plane for the purpose of returning graduated mechanics to the Training Center. During the course of his return flight to Kelly Field his motor started throwing excess oil and he was forced down at Little Rock, Arkansas. A Transport plane from the San Antonio Air Depot, Duncan Field, was dispatched to Little Rock and the enlisted men were brought to Kelly Field. Captain Selzer's troubles were not over. Upon effecting temporary repairs to his motor, he took off for Kelly Field, but upon reaching the vicinity of Austin, Texas, he encountered heavy weather conditions which forced him to land there. Due to the soft condition of the landing field, the airplane nosed up. There was very little damage, however, and the plane will soon be flown home.

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GUATEMALAN OFFICER DIES IN CRASH

Kelly Field heard with deep regret of the accident which occurred to Captain Nicolas de Leon, Jr., who graduated from the Advanced Flying School in 1933 and was killed in an airplane crash in Guatemala City, Guatemala, recently. Capt. de Leon was an officer in the Guatamalan Air Force. He attended the Primary School at Randolph Field and was transferred to Kelly Field in July, 1933. He is survived by his widow and son, George de Leon.

Many authorities believe that aircraft will play the most important part in future wars. President Coolidge has been quoted as saying that "Our National defense must be supplemented, if not dominated, by aviation." General Foch has said that the potentialities of an air attack are so great that it may impress a people to the extent of forcing their government to lay down its arms."

The above opinions were expressed at a time when the potential effectiveness of aviation was much less than it is today. Since these opinions were promulgated, aviation has demonstrated its ability to cross the oceans, to circumscribe the globe, and to make countless flights irrespective of weather conditions.

Flights of several hours' duration have been made through thick fog without preventing the attainment of the objective. Airplanes have been landed in dense fog. Aerial armadas have been maneuvered over vast stretches of country with practically no losses. Continuous control over all components of these forces has been exercised from the air through the use of radio and telephone. The speeds of airplanes have increased 30 percent, their carrying power has been about duplicated and their operating reliability has been improved to such an extent that the fear of failure to reach the objective, due to mechanical failure, has been practically removed. Of course, such remarkable progress during the past few years should not lead one to believe that the ultimate limit of advance has been reached. Research and technical development now in progress indicate that the advance in the last 10 years is only one step in a long series of progressive steps. Conservative military aviators are loathe to make definite statements with respect to their conception of the potentialities of military aircraft of the future for fear that their conservative beliefs will be considered nothing but dreams.

That the oceans are not insuperable barriers in the paths of aviation is now conceded by all. The next generation must reconcile itself to the fact that large fleets of airplanes can be projected from continent to continent as easily as large fleets of naval vessels can be moved today, and with a speed enabling such movement to be effected in the hours of daylight. America will then fear the destructive power of these in the same way as Europe fears them today. You will recall that during the World War, Paris became panic-stricken over the fact that a gun had been created which could throw a shell into that city from within the German lines. The aviation of the future can, figuratively, throw a shell across the Atlantic Ocean and direct that shell from a platform immediately above the objective.

Large armies require the movement during mobilization of large masses of people along narrow traffic lines. The transportation of their impedimenta and supplies requires the maintenance of railroads, roads and bridges. The air force is able to keep all the movements of such an army under observation, both by day and by night, thus preventing surprise concentrations of large armies as was formerly the case. In fact, such armies cannot be operated in the face of the terrific machine gun and bombing attacks of a powerdul enemy aviation of the future. The tactics of future wars will develop along the lines of covering by air force operation the seizure of strong strategical positions by extremely mobile mechanized ground forces.

Our national policies contemplate defense of the United States against any foreign aggression. Nowhere do we find a policy of aggression. It is not contemplated that we take the offensive against any nation or for any reason except to resist an invasion of our territory.

With this basic national and military policy, we can readily deduce what should be the air-defense policy of the United States. That policy should be so to organize, train, and equip military aviation in time of peace as to permit it in time of war to be employed immediately in defense of our territory. Every offensive weapon or characteristic of modern military aviation should, in case of an invasion, be immediately brought to bear to resist such invasion.

As a part of the Army, the function of the Air Corps is to further the mission of the Army in protecting our coast lines and continentalfrontier, in forming a covering force in case of a major war, in holding and protecting our overseas possessions, and in protecting our cities and industrial areas from demoralizing and destructive air raids. * * * '

As most convincing evidence of the present deplorable condition of the Army Air Corps we now quote from testimony given by Hon. Harry H. Woodring, The Assistant Secretary of War, before the subcommittee of the House Committee on Appropriations, on January 16, 1926:

'Mr. Bolton. How many serviceable airplanes has the Army at this time?

Mr. Woodring. Approximately 1,060 airplanes were in the hands of the Air Corps on December 2, 1935, of which only about 200 are of the most modern type. * * *

Mr. Bolton. Allowing for wash-outs, deliveries, and so forth, what will be the number of airplanes in the Air Corps as of July 1 of this year?

Mr. Woodring. The figures furnished my office indicate that the Army Air Corps will have approximately 777 airplanes in its possession on July 1, 1936.'

When asked about the effect of the appropriation of $22,330,000 for the fiscal year 1936, Mr. Woodring said:

'A continuation of an appropriation of the above size will never permit the Army Air Corps to reach the desired strength as it will only take care of approximate yearly losses.'

We are reliably informed that foreign nations have from 5,000 to 10,000 planes for military purposes. As to the utter inadequacy of America's Air Service we need but recall the testimony of General Westover before the Appropriations Committee in December 1935 when he informed the committee that it is estimated that not more than 736 airplanes now on order will be delivered during the fiscal years 1936 and 1937. During this time there will be estimated losses of 981 airplanes. The net result of these factors, therefore, will leave the Air Corps on

June 30, 1937, with an estimated number of 779 project airplanes, with about 529 planes classed as obsolete on account of having passed the 5-year age limit. Such of the 529 as are suitable for retention will have to be continued in use in order to permit necessary flying by Air Corps personnel. The number and type of airplanes now available in our foreign departments makes the air defense of these possessions almost impotent, and the same lack of airplanes is greatly handicapping the ground force in the training for their part of the defense.

We get only 565 planes under the War Department appropriation bill which passed the House last month.

We are now nearly 10 years behind in the development of the Army Air Corps. The following is a list of airplanes on order or obtained during the last six years.

	Planes
1930	565
1931	364
1932	285
1933	118
1934	222
1935	401

It has been reliably estimated that we must have 800 planes per year if we are to increase the present strength of our air force. The general headquarters air force for adequate self-defense must have a minimum of 980 serviceable airplanes able to take the air at any time. In spite of this fact the maximum number yet supplied to the general headquarters air force is 383 planes. When the recent maneuvers took place in Florida, General Andrews was able to take the air with only 162 serviceable planes.

Scope of Proposed Legislation

The Baker Board and Howell Commission recommended that Congress enact legislation to enable the United States of America to bring its Army Air Corps to 2,320 serviceable planes. Since these reports great strides have been made in the development of aviation, and today international unrest and disturbance exist again in foreign lands.

It is the opinion of the committee that further neglect in the development of Army aviation is nothing but false economy. While foreign nations are making available thousands of planes for attack and aggression it is our patriotic duty to develop our own air force for adequate defense.

The enactment of this legislation is essential to achieve a full realization of the words of counsel uttered by our first President, George Washington, when he said, 'We should maintain a respectable defensive posture.' It is now well recognized that air bases have the same relation to air power that naval bases have to naval power. In other words, an air force, in order to be efficient must be ready to operate, and it must have available bases from which it can operate.

For the United States of America the development of air power is purely a weapon of defense but such development as proposed herein is necessary for adequate defense.

In the matter of national defense we frequently fail to recognize the relative protection afforded by an adequate Navy. We must remember that the hostile fleet is the main objective of the home fleet and that the location of the home fleet therefore depends largely on the action of the enemy. Since our fleet must be free to meet the enemy fleet we cannot predict what portion of our coast will be protected by our Navy or how long such protection may last. As a result of this important factor we must fully realize the necessity of an adequate air force in the maintenance of an effective national defense. The committee unanimously urges the enactment of this law so that work thereon may begin at the earliest possible date. The best service that we can render our constituents, our States, and the Nation is to provide now for rational Air Corps development so that we may carry on without the loss of a single life on account of inadequate preparation."

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Army Aviation Heroes of the Past

(Continued from Page 14)

Distinguished Flying Cross by Major General Malin Craig.

Three years ago last January 20th, the last remaining member of The Three Musketeers, Lieut. Irvin A. Woodring, met his death while testing an Attack ship. On January 23rd, he was buried at Arlington National Cemetery. The entire staff of officers on duty in the Office of the Chief of the Air Corps attended. Well might some of the Musketeers' old friends repeat with feeling what Lieut. Woodring said upon the death of Lieut. Cornelius, the second Musketeer to die: "I don't think of my three closest friends being killed. I've outgrown that idea. Rather I regard them as having gone on a long cross-country, and that sometime they will come back."

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EXTENDED FLIGHTS BY 20TH PURSUIT GROUP

Several extended cross-country flights in formation were performed by the 20th Pursuit Group squadrons during the month of June for the purpose of unit navigation training. The 55th Pursuit Squadron, commanded by Major A.F. Herold, sent a flight of 14 planes to Little Falls, Minn., on June 19th, the return to Barksdale Field being accomplished on the afternoon of June 21st. Twelve pilots of the 79th Squadron, under Captain Carlton F. Bond, flew to Denver, Colo., on June 27th, and made the trip both ways within the space of three days. A flight of twelve planes of the 77th Squadron, in command of Major Oliver P. Gothlin, took off for Wright Field, Dayton, Ohio, on June 28th, and returned to Barksdale Field on the afternoon of the following day. All of the above flights included stops at various fields familiar to those participating.

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Washington, D. C.

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VOL. XIX **Air Corps News Letter** NO. 15

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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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NEW SHORTCUTS IN BOMBARDMENT TRAINING

Eight thousand feet above a Southern California bombing and gunnery range, a twin-engined Bomber roars through the night. A mile nearer the earth another Bomber drops a flare, bathing the target in light more brilliant than day.......

Nearly two miles above March Field, a Bomber sets a course, and when the target appears in the bomb sight the bombardier releases not a bomb, but a radio signal ....

Embryo bombing pilots and bombardiers, sitting quietly indoors, drop theoretical explosives on a miniature range...

On the ground, carefully placed bombs riddle a retired Transport that the effect of bombing on airplanes in flight may be determined.......

Simple ideas involving the Hornet-powered Martin B-12 Bombers are bringing Bombardment units of the Air Corps a degree of training not possible a few years back. Coupled with the necessity for strict economy, these ideas are proving feasible in military operations.

Bombing with flares, for instance. Planes from the 19th Bombardment Group are now working out that technique. One, laden with 300-pound demolition bombs, flies at 8,000 feet. Another, bearing a load of parachute flares, flies at 2500. Their flights carefully timed, the flare ship passes over the target a few seconds ahead of the bombing ship. Carefully, pilot and bombardier figure speed and wind drift, release the flare. As the bombing plane further aloft roars on toward the target, the flare illuminates the objective, drifts slowly toward the center, and at the proper second the bombardier trips his releases, loosing the steel eggs for their flight toward the earth. Split-second accuracy is making this type of night bombing possible, even on nights when there is no natural light to assist.

The plan has further possibilities, Air Corps officers observe. Bombers flying at widely separated levels divide the anti-aircraft fire, thus rendering it less effective. Other ships laying smoke screens and gas further hamper ground troops. On moving targets, such as battleships, bombing, using flares, has not yet been tried. But officers concerned with the plan believe it will be similarly effective, once the speed and direction of the moving target is known.

Bombing with live bombs is very expensive, and for that reason an alternative method involving the "camera obscura" has been worked out. Here, as demonstrated by pictures taken at March Field, Calif., the bombardier presses his key to send a radio signal when the target appears at the proper spot in his bomb sight.

The camera obscura consists of a portable box, mounted on four wheels and pulled by a truck containing the necessary two-way radio apparatus. A lens in the roof of the box projects the image of the bomber on a large square of paper or chart. The chart room, no larger than four feet square, is light proof. In it the scorer traces the path of the plane and records the hits and misses.

Suppose we look in on such a flight. Radio truck and camera obscura, which comprise the camera or target station, take their position at the edge of the tarmack on March Field. Beyond the range of vision toward the southwest the Bomber climbs for altitude. At last the radio operator calls to the camera operator announcing the ship's course. You see the camera, which is set on an azimuth circle, swung about until the lens is inclined slightly toward the oncoming Bomber.

Were you aloft, you would hear above the droning engines the bombardier's voice as he speaks into the interphone system: "Steady on course. Turn right...steady... stop...right again.. stop...turn left... stop...", until finally the cross-hairs in the sight show the target centered way below and ahead. Then the bombardier "dumps his load," only now the load consists of a single radio impulse, and not a half-ton of TNT stuffed into a steel case at a cost of possibly $500. Having "fired," the plane continues its course, turns and again approcahes the target for another round.

Meanwhile, what's going on down below? Sitting in the radio truck, an operator facing his transmitting and receiving panel, a speaking unit at his mouth ready to talk with the bomber crew. Over the lone antenna stretching away from the truck to a sectional steel tower erected a few minutes earlier by two technical sergeants by the simple expedient of "walking it up," until the guywires were stretched taut, the signals flash. Standing at the camera obscura, head and shoulders hidden by the black curtain which had been rolled down to shut light out from the interior, one of the sergeants faced the drawing board down which the image of the plane is racing.

Through his earphones, the operator hears the "fire" signal. At that instant, the plane's image may be seen clearly at the top edge of the paper. After marking on the paper the point where the shadow fell when the radio shot was fired, the operator continues to chart the plane's path, marking at each second's tick of a metronome its new position, and 23 seconds after the signal was dispatched, he makes his final note. There is where the bomb landed.

Some little calculation is required for final results. Knowing the plane's altitude, the time of fall is likewise known. But the plane's speed also enters into the equation, and after these factors are applied the operators determine whether the "bomb" has struck the camera obscura, which was the target,or it was a miss; and if a miss, by how many feet. Simple when explained, and this method saves Uncle Sam thousands of dollars yearly. Or, to put it another way, makes possible one phase of repeated training in bombardment which otherwise would be impossible because of large costs involved in dropping the real thing.

Training with the camera obscura is not an occasional program. It continues for weeks, or until pilots and bombardiers become skilled in their teamwork. They then are ready to drop their annual allowance of 100-pound bombs for training and for record runs. Skilled though they may have become in "mock bombing," they still must actually drop live bombs to get the feel of bombing. Additional considerations come into play, such as air resistance to the bomb, coordinating the sight and release mechanisms and the actual mental reaction to dropping bombs containing explosives and seeing them strike the target on the nose.

In this phase of the program, the officers work by teams. Even yet the undertaking partakes of the synthetic,for only about four pounds of powder is loaded, the rest of the charge being made up of sand. Yet for all practical purposes, this constitutes "live" bombing, for the sand-filled projectiles behave exactly like powder-filled bombs and provide the necessary reality to the training.

Closely related to the work with the camera obscura is the training within a specially constructed room with the bomb sight. The pilot sits near the ceiling, Below him a device, known as a "miniature range," which is a small scale strip of terrain painted on a canvas, moves slowly on an endless chain. Below him, the bombardier sees bridges, railheads, farm houses, airdromes, highways, cities and ammunition dumps, moving along under him as though he were flying above this panoramic scene.

Suddenly he is ordered to bomb a given target - let's say, an ammunition dump. As the dump moves into line with the cross hairs of the sight, he turns a crank to set the instrument for ground speed,keeping the cross hairs lined up on the target until the automatic signal indicates that the mechanical plane is set. He pulls the release handle when the target crosses a second point on the sight. This movement operates a signal to the scorer, who notes the hit. It is only after intensive training on the indoor range that the pilots carry their lethal loads aloft for practice with live bombs.

Experiments related to defensive maneuvers in the air also have been conducted at March Field with obsolete airplanes. Small bombs were exploded in their vicinity and the effects on fuselage and wings were noted. While details of this undertaking are not available, it is expected to have an important bearing on defense maneuvers in the future, with particular consideration given to the position of planes in flight being made the target of time-fuse bombs dropped from higher flying elements.

Labor and money-saving devices put into effect by the Air Corps are saving many dollars for taxpayers and creating new standards of efficiency in bombing operations. Some of these ideas are almost childishly simple, yet they effect great savings. The innovations described above, and many others which have found practical operation in the Air Corps have been the outgrowth of practical progress in military aviation, coupled with the necessity for keeping the aerial units - both material and personnel - ready for action at the lowest possible cost.

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During the month of June, the Engineering Department of the San Antonio Air Depot overhauled a total of 22 airplanes and 82 engines and repaired 36 airplanes and 34 engines.

NICHOLS FIELD SCOOPS ITSELF DRY

By Lieut. Wycliffe E. Steele, Air Corps

Since 1924, the landing plat of Nichols Field, Rizal, P.I., has always changed to a veritable lagoon for several months each year during the rainy season, precluding any flying while the field was thus under water. The inundation became of such established yearly regularity that the field was humorously referred to as Lake Nichols.

It would seem that every year new plans were suggested for the diminution of or prevention of the floodings, but for one good reason or another they never reached the shoveling stage.

On October 15, 1935, Nichols Field, under the administration of Major Thomas W. Hastey, scooped the first shovel of dirt on a cardinal canal project that would forever keep the flying field drained to permit flying the year round.

The project as it was predetermined was no inconsiderable business, and, after examining the equipment available for the work, it seemed to us that the completion of the work would be long in coming. However, we had failed to reckon on the resourcefulness of the Air Corps.

When on May 27, 1936, the rains stepped in to put a stop to the task, 81 men, with the aid of a pigmy one-quarter yard gasoline shovel that required the ingenuity of the smart Air Corps maintenance crew to keep it in fighting trim for its prodigious gnawing labors, along with five tractors, rippers, scrapers, graders, twelve trucks, and ten thousand gallons of gasoline, had, in the one hundred and eighty working days since October, completed the big ditch to a point where the field was assured adequate drainage during this rainy season. It was a job well done.

From humble beginnings, Nichols Field's landing area has grown to a size of approximately 3850 feet long by 900 feet wide. This particular area was once the dozy barrio of Mabong. (Mabong had a scant sixty wells on its location which ranged in depths and peripheries up to sixty feet and thirty feet, respectively, to supply water for its bulo plants - "betel nut" - which require individual watering very frequently). The whole of this area is drained by the Paranaque River, which runs east to west along the north end of the field, and north to south along the west border of the post.

The Manila-Cavite railroad tracks run north and south along the east border of the landing field. East of the railroad, and rising to an average of approximately ten feet above the landing field, is a tract of land, some four thousand feet long and one thousand feet wide, given over to the cultivation of rice, a plant which requires water in capital letters. The flying field is a natural basin for the draining waters of this higher ground, a fact which guaranteed Nichols Field's annual flood.

The new drainage ditch, lying as it does between the Manila-Cavite Railroad tracks and the high rice land, gulps up every bit of water that tries to seep through unto the field from this area, and also takes care of about 75% of the field's drainage, emptying the whole into the Paranaque River.

A total of 65,000 cubic yards of dirt was dug out to make this ditch 3,600 feet long, 25 feet wide, with an average depth of five feet.

This canal by itself is of immeasurable value, but the building of it resulted in another improvement to the field almost as important as the drainage. The dirt that was dug out was used to build a monsoon runway, giving Nichols Field a good South West and North East landing run. Additional filling and leveling on the field resulted in a 700-foot increase in the length of the east-west landing run.

Approbation is due those officers and enlisted men who contributed to the successful undertaking of all this work and performed wonders with manifestly inadequate facilities.

Atop a human point of view, we reserve a special praise for those responsible for the direction of traffic during this work. The regular flying activities of the field were never hindered while those five tractors hitched to rippers, or scrapers, or graders, and those twelve trucks, heavily loaded or empty, shuttled back and forth over the field guided by wise traffic management. We are proud to state thatnot one accident occurred throughout the whole of this work.

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FIRST BALLOON SQUADRON IN MANEUVERS

The First Balloon Squadron is scheduled to depart from Fort Sill, Okla., on August 1st for Camp Custer, Mich., where they will engage in the Second Army Maneuvers for a period of two weeks, returning to Fort Sill upon completion of the maneuvers. The Squadron is to operate under simulated war conditions in all seriousness, since a limited amount of clothing is allowed and civilian clothing is entirely excluded.

The trip from Fort Sill is to be made by motor caravan, the entire unit moving by this means. The return trip is to be mate in the latter part of August.

THE NEW HOME OF THE 91ST OBSERVATION SQUADRON

By the News Letter Correspondent

CRISSY Field is no more.

No longer will the city by the Golden Gate enjoy the distinction of having an Army airport within its boundaries, or the residents thereof be awakened each morning by the sound of Army airplane engines humming over their rooftops.

No longer will the pilots of the 91st Observation Squadron returning from cross-country flights have to hope and pray that they will be able to find the field when they arrive, instead of a nice thick blanket of fog, concealing in its depths several assorted hills, bridge towers, high buildings, etc.

The 91st Observation Squadron and the 15th Photo Section, occupants of Crissy Field since its inception in 1919, were ordered away from their beloved home in the middle of June, and by the 30th of that month had packed, bag and baggage, families, household lares and penates, even to the Squadron dogs, and had moved over 900 miles to their new station, Fort Lewis, Washington.

The move was made by almost every conceivable means of transportation. Freight cars, passenger trains, government motor trucks, commercial motor vans, private cars, motorcycles and airplanes were all used in transporting the personnel and impedimenta of the field. The Squadron boat, with its caretaker, was loaded on a coastwise freight steamer and transported to Seattle, from which place it was run under its own power to Steilacoom, the nearest dock on Puget Sound at which it could be parked.

Although we had been prepared for the order to move for a month or more, no decision had been made as to the future home of the 91st, so no packing or crating was done until the final order to move was received. Upon the receipt of this order, all ordinary operations at Crissy Field were discontinued, and everybody was set to work completely stripping the field of movable Air Corps property, crating and boxing it, and loading it onto freight cars, of which a total of eight were fully loaded. The furniture of officers and noncommissioned officers was transported by commercial motor van, this being the most convenient and economical method.

Practically all the personnel of the post evacuated on or before June 27th, the only ones remaining after that date being those with property responsibility in order to turn over the property left behind to the Quartermaster, and to complete the audit of Air Corps Supply.

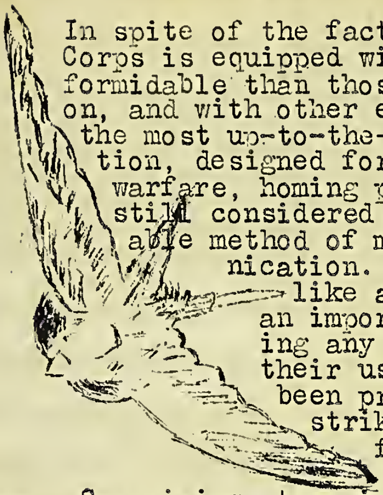
The Army motor truck convoy departed from Crissy Field at 8:00 a.m., June 27th, and consisted of two Field Servicing Trucks, two photographic trucks, two Federal 2½-ton cargo trucks, one reconnaissance car, three Dodge panel radio trucks, and a number of Dodge 1½-ton cargo trucks. Thirty-three enlisted men traveled with the motor convoy as drivers and relief drivers, accompanied by two officers as Convoy Officers. The convoy arrived at Fort Lewis, Washington, at 6:30 p.m., June 30th, having covered the entire journey in four days of driving. This is believed to be a record for moving an Army motor convoy. All driving was done by daylight, starts usually being made about 7:00 a.m., and halts for the night before 6:30 p.m. The longest day's drive was approximately 300 miles. Only one truck, one of the Field Servicing Trucks, gave any trouble during the entire trip. This vehicle suffered from vapor lock in the fuel line from the pump to the carburetor while driving through the Sacramento Valley in California on the first day out. The trouble was finally remedied by the ingenuity of the driver, who wrapped the line in asbestos packing, held on by friction tape, and removed the hood of the truck, after which it ran without further difficulty.

It speaks well for the quality and condition of the private automobiles owned by members of the command that, although nine officers and fifty-four enlisted men were authorized to proceed by privately owned automobile, all arrived at Fort Lewis safely, and not one report of mechanical trouble was heard - not even a punctured tire.

The airplanes assigned to the 91st Observation Squadron were all flown to Fort Lewis several days in advance of the final abandonment of Crissy Field, the C-14 Transport airplane making two trips to ferry the advance detail of enlisted men, and the C-14 airplane assigned to Hamilton Field was borrowed for two round trips to aid in ferrying this detail and to return the pilots of the O-25C airplanes to Crissy Field. A total of 25 enlisted men was transported by air.

The 91st Observation Squadron and 15th Photo Section, in their new home, Fort Lewis, are at present very badly handicapped by the lack of technical and administrative buildings. The buildings found here upon arrival were sufficiently large for the Air Corps Detachment of three officers, 35 enlisted men and three airplanes previously stationed here, but are totally inadequate for a full strength Observation squadron and photo section. Even with our few airplanes, half of them must be parked outside the hangar, and all departments have less than half the space required for efficient functioning. It is hoped that in the near future adequate housing will be provided.

THE TRAINING OF PIGEONS



In spite of the fact that the Air Corps is equipped with wings more formidable than those of the pigeon, and with other equipment of the most up-to-the-minute invention, designed for use in modern warfare, homing pigeons are still considered an indispensable method of military communication. The birds, like aviators, play an important part during any skirmish, and their usefulness has been pronounced by striking feats performed during both peace and war. Surprising, too, is the intelligence of these birds as exemplified when they arrive at their home loft, after encountering driving rains and heavy fog or an occasional battle with a pigeon hawk enroute. These adversities are rather insignificant compared with the hardships experienced in the last war. Some have completed their missions suffering from injuries so severe that they died after they arrived. This, it is said, is due to a more or less unsolved phenomenon in the fact that home to a pigeon is what the North is to a magnet. Too, it may seem strange to think that a pigeon has intelligence, but this faculty is one above all that the trainers depend upon most.

The pigeoneers at Bolling Field are steadily striving to increase this faculty. Under the supervision of Lieut. George W. McGregor, Air Corps; Staff Sgt. Gawthrop and Private Hagge, Signal Corps, a fine pigeon loft of sixty birds is kept and trained to the latest developments of pigeon usage. Usually the birds' training schedule is carried out when sufficient room is available in a transport plane to carry the basket in which they are kept prior to release. On some occasions the birds are released in flight. The motor of the plane is throttled back, and when the wind resistance is at its lowest degree the birds are tossed into the air. Here, again, the pigeon displays its intelligence, for it holds its wings closed until it has dropped sufficiently from the slipstream of the plane and then streads its wings to begin the homeward flight.

It is interesting to note that recently thirty birds were carried to Langley Field in an airplane, released, and 29 of them returned to Bolling Field. The first group arrived in four hours and forty minutes, and arrivals continued for the next two hours. Poor weather conditions and fog along the course, with a strong prevailing northeast wind, made the flight difficult and, unfortunately, one bird was lost. Two days later, another flight of 24 birds was flown to Roanoke, Va., an airline distance of 200 miles. and released at 9:55 a.m. The first group of eight arrived at Bolling Field at 4:00 p.m., totalling 6 hours and 5 minutes' flying time. Ten more birds arrived at intervals that afternoon, and four birds arrived at intervals that evening. A little slow on schedule, four birds arrived the second day, one the third day and two on the fourth. The last arrival was completely exhausted, with a severe flesh wound in the breast but with every determination to fulfill its mission. Again, considerable fog and rain over the decidedly mountainous country made the flight a difficult one. Their flights were not listed as record flights, but their coming through under trying conditions well compensates for the time, patience and expense to preserve their usefulness in time of need.

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READY REFERENCE ON FLYING FIELDS

In order to facilitate and maintain a ready reference on the condition of all flying fields within a radius of 500 miles of Barksdale Field, strip maps covering ten routes radiating from that field have been mounted on panels which are hinged on a pedestal which is kept in the Post Operations Office. When changes occur on the condition of the flying fields shown on the strip maps, this information is posted on the margin of the panel opposite the field concerned. Pilots departing from Barksdale Field are able to secure information in a few minutes on all flying fields within a 500-mile radius by referring to these strip maps.

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UNFORTUNATE BALLOON ACCIDENT

Air Corps personnel offer deepest sympathy and condolences to the bereaved families of Master Sergeant R.F. Rumpel and Staff Sergeant D.T. Tucker of the First Balloon Squadron at Fort Sill, Okla. The two men met their death in the explosion and burning of a free balloon in which they were making a training flight.

Captain F.D. Lynch, who recently took over the command of the heavier-than-air unit at Fort Sill, was thrown clear of the debris and suffered from slight burns, while Staff Sergeant Joseph Murray, pilot of the balloon, was seriously burned and is now recovering in the station hospital. The balloon apparently exploded just as the rip cord was pulled when the basket touched the ground at the end of the flight about noon on July 10th.

Sergeant Rumpel was 46 years of age, and Sergeant Tucker, 33.

EXTENDED FLIGHT BY THE 11TH BOMBARDMENT SQUADRON

The 11th Bombardment Squadron takes off from its base at Hamilton Field, Calif., at about 8:00 a.m., August 1st, on what promises to be an immensely interesting as well as instructive flight.

With nine B-10B airplanes awing, crewed by a total of 16 officers, 2 flying cadets and 18 enlisted men, the Squadron will parade its strength over one of the most interesting itineraries which has ensued from Hamilton Field for some time. Officers and men anticipate many pleasant visits to the cities and towns along the route, and it is hoped the flight will not only serve its basic purpose, instruction and training, but as a "Good Will Flight" as well.

The 11th Squadron possesses an enviable World War record, which includes honors for four battles (Lorraine, St. Mihiel and the Meuse-Argonne); 13 victories which received official recognition and confirmation; 32 bombing raids and 17 combats with 20 casualties, consisting of 10 killed, 8 taken prisoners, one wounded and one reported missing in action. Its peace-time record, which is second to none, includes selection as Bombardment Component of the Demonstration Unit at the Air Corps Maneuvers of 1931; commendation received from General MacArthur for loyal and efficiend work during those maneuvers; rescue of the snowbound Navajo Indians in Northern Arizona in January, 1932; a flight to the Yosemite Valley, via Death Valley, in May, 1932; the Rocky Mountain mission in November, 1932; assistance given to science in its quest for the secret of the cosmic ray undertaken by Dr. R.A. Millikan of the California Institute of Technology, and various other long cross-country flights too numerous to mention. It is morally certain the flight will reflect to the glory of this famous old organization, and the cities along their path will know that "Maggie" slipped again and that "Jiggs" is having a night out.

The 11th is now commanded by Major Carlyle H. Ridenour, Air Corps, who served with the Air Corps during the World War, graduated from the Air Corps Engineering School and earned a B.S. degree at the California Institute of Technology. The Squadron is particularly noted for its high altitude bombing work, having dropped bombs weighing from 100 to 2,000 pounds from record altitudes. Needless to say, such missions necessitate the use of oxygen and heavy winter clothing, whatever the weather conditions on the ground, and the rapid changing of temperatures from warm summer to coldest winter in the course of minutes causes considerable discomfort to all personnel participating.

The following is the itinerary for the contemplated flight:

August 1 - Hamilton Field to Spokane, Washington.

August 3 - Spokane to Missoula, Mont.

August 4 - 9, operations from Missoula to test all landing fields for suitability for operations by B-10B type of airplanes and facilities of adjacent towns for quartering of personnel, servicing of aircraft, and for communication facilities.

August 9 - Maintenance of aircraft at Missoula.

August 9 - Missoula to Cheyenne, Wyo., and Denver, Colo.

August 10 - Denver to Albuquerque, N.M.

August 11 - Night flying from Albuquerque to Hamilton Field, via March Field, Calif.

Following is the contemplated roster of personnel:

Officers

Major C. H. Ridenour, Commanding.
Captain D.R. Lyon, Operations Officer.
Captain M.L. Harding, Flight Commander.
1st Lt. H.T. Alness, Supply Officer.
2nd Lt. C.A. Peterson, Adjutant.
2nd Lt. A.R. Luedecke, School Officer.
2nd Lt. H.E. Knieriem, Assistant Communications Officer.
Flying Cadets Richard T. Knight and David H. Walker.

Enlisted Men

Staff Sergeants Charles W. Cheatham, Louis T. Silva, Everest F. Waid, Andrew R. Levesque.

Sergeants Ludwig Kurrle, Rua C. Hayes, Harold S. Cooper.

Corporals Otto G. Glass, Paul McDaniel, Raymond J. Elliott, Arthur R. O'Herron and Ira W. Huddleston.

Privates Roy J. Wilhite (1st Cl.), Gaston R. Upchurch, Thomas F. Dillon, John W. Taylor, Myron H. Pike, Leslie R. Brinkmeyer, James T. Phillips, Irving M. Camp, Robert M. Kinney, Jack E. Sullivan.

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DEMONSTRATION FOR WAR COLLEGE STUDENTS

The participation by the 37th Attack Squadron, Langley Field, in the demonstration for students of the War College left nothing to be desired in displaying effective tactics on deployed ground targets and convoy trains. Led by Major Schramm, Squadron Commander, graduate smoke eater of the last class of Chemical Warfare Service School, this unit strafed an area target with 2400 rounds of cal .30 ammunition, flying at 75 feet in echelon to the right. They added insult to injury by returning at 1000 feet and literally destroyed the target with sixty 25-lb. fragmentation bombs. To insure realistic conditions, the fragmentation bombs were serviced by the Nansemond Ordnance Depot on the James River and, judging by results, the time and expense were not wasted.

THE MEDICAL CONTRIBUTION TO THE DEVELOPMENT OF BLIND FLYING

By David A. Myers, Major, Medical Corps, U.S. Army.

(Continued from last issue)

In order to understand how and why this research was started, it is necessary to digress into aviation history.

From the beginning of man's invasion of the air, fog, the universal menace to travel of all kinds, has taken a great toll of human life. Old-time pilots learned to fly without artificial instrumental aids of any kind, and developed to a remarkable degree what was called "Flying Sense". Until long after the war, flying for any length of time without sight of earth or sky was impossible.

About 1918 Dr. Elmer Sperry of gyroscopic fame, invented a Turn indicator. Since that time many artificial aids to spatial orientation have appeared. Bank and Turn indicators, artificial horizons of various types, flight integrators,etc.,all of these instruments are gyro controlled to overcome the pull of gravity and allow their "indicators" to show ship movement and spatial position.

The Sperry Artificial Horizon consists of a miniature gyro controlled airplane which will assume the position of the carrying plane while in flight. The pilot controls the position of his airplane by visualizing what the miniature plane is doing, and correcting his position accordingly.

The Bank and Turn indicator mounted at bottom has a pointing arrow which indicates all turns of the plane, and a small ball seen in the runway at the tip of the arrow, which moves from side to side when the plane is banked up in a turn to right or left. Every artificial aid to spatial orientation lets the pilot "mentally" keep one foot on the ground.

Probably one of the first pilots to become interested in the Turn indicator was Major William C. Ocker, Air Corps. It is believed he tested the original Turn indicator for Dr. Sperry, and,when the Bank and Turn instrument was brought out, was much enthused. The original intent of these instruments was to improve technical flying ability by showing pilots when smooth turns and banks were being made, and to function as a crutch to the magnetic compass. All of the old-timers were, however, taught to fly by instinct, and the terms "inherent flying ability","seat sense" and "flying sense" came into use. Artificial aids showing them when their ships were turning or banking were considered as entirely useless, as all they had to do was to look at the earth and see what their plane was doing. So, although all planes were later equipped with indicators, they went unserviced and unused. Unfortunately for many, the visibility did not always stay good on every flight so that pilots could look overboard at God's horizon and see what their ships were doing. When visual contact with the earth was obliterated,they discovered that it was impossible to maintain their planes in the air. If the fog was not completely on the ground,they would come down under it and "hedge hop" over trees and houses in a desperate attempt to keep visual contact with the earth until they could find a place to land. Only extreme skill and good luck brought many of them through. If the fog was completely on the ground, the only alternative was to climb high above possible danger. This was little comfort, for there is the disturbing knowledge that when the ceiling is reached the fuel may be gone, and the plane must come down. Flying in fog without proper navigation instruments, the pilot will become hopelessly lost from a directional standpoint.

Flying in fog without a visual reference to gravity (the earth), such as a Bank and Turn indicator, or some form of artificial horizon, the pilot will be (1) unable to sense the position of his ship with relation to the earth's surface,(2) unable to sense the speed and direction of motion, and (3) will eventually go into circular motion, (4) experience the vertigo described, and (5) crash unless he takes to his chute before volitional control is lost.

Blind Flying is the grim specter of aviation. The remedy for all this is to practice simulated Blind Flying under the hood until Instrument Flying is as easy as flying under clear skies and with perfect visibility. About 1919, the Air Corps advocated the use of any instruments that would add to the safety of flying, and there was a revised interest in various flying instruments. However, no progress was made until 1926.

I quote from a report made by Donald E. Keyhoe in 1929:

"***Full credit must be given these men (pilots) who have tested the various instruments and methods suggested by scientists. The invention of the Bank and Turn indicator was the first step. But the pilots who first used it tried different methods without instruction,so few became expert. Those who succeeded were able to go through fog or snow for 20 or 30 minutes and at the end of that time their strained nerves would stand no more. Sight of ground or sky became vitally necessary to clear away the confusion that was swiftly taking control. Two men are mainly responsible for progress beyond this stage. Ocker and Myers proved that this strain was caused by the pilot's disbelief in his instruments and a strong tendency to trust his own senses, which are always misleading. The Ocker-Myers method takes into account the three elements which give balance, muscle sense, sight and vestibular sense.***"

There is a tendency in an occasional young aviator to wax so cocky over his flying ability that it becomes necessary to partially deflate it for his own safety. For many years I had used the following plan in such cases: They were placed in the Jones-Barany revolving chair and turned right or left, and asked which way they were turning. Their replies were naturally correct. Their eyes were then covered and the rotation repeated. After a few turns, the chair was gently stopped and they were asked which direction they were turning. Vertigo having been induced, their replies were invariably that they had started to turn in the opposite direction of prior motion. The eyes were uncovered, and to their amazement the chair was not turning at all. If this did not quite satisfy them, the rotation was continued until they experienced the sensation that the body was not moving. On being uncovered and finding they actually were turning right or left, their chagrin was very evident. For an aviator to suddenly discover his inability to tell which way his body is turning, if at all, is, to say the least, disconcerting.

In January, 1926, I gave this induced vertigo test to Major Ocker - not because he was classed as cocky, but to see what the mental reactions of an old-time pilot would be when he discovered he could not tell whether he was turning or sitting still. Following the test, he disappeared without comment of any kind, but soon returned with a view box carried in his hand. The test was repeated in all combinations of rotation, using the unlighted box to cut out the light, and thus remove sight from the trinity of equilibrium senses. There was the usual induced vertigo, with the usual inability to tell correctly which way his body was turning, etc. The gyroscope was then started, and the Bank and Turn indicator put in action. The flash was lighted and the tests repeated. This time every answer was correct as to direction of motion, stopping and starting. Even the confusion of reversals was absent. The sensations were felt the same as before, but by giving the answer shown by the pointer on the Bank and Turn indicator, instead of the answer prompted by his senses, it was found impossible to confuse him.

This demonstration started the research into Blind Flying. It was immediately recognized that there was the answer to the pilots' inability to do Blind Flying without a visual reference to gravity.

By lighting the box, the equilibrium trinity of senses was restored to a coordinated action. Merely restoring sight to the equilibrium sense, however, is not enough. There must be something within the pilot's range of vision that will act as a vertigo stopper, and tell him what position his ship is in with relation to the earth. In other words, allow the pilot to mentally visualize "where is the ground". The hand on the Bank and Turn indicator will accurately show motion in either direction, right or left, and will come to a dead center and remain there when there is no rotation. There will be the same false impressions of reversal of movement and falling received by your brain, following the rotation, but by means of your sight you will be able to correct these false impressions of movement, and your vertigo will be almost immediately overcome, provided you believe the instrument.

That there was any connection between the normal physiological reactions of a pilot, and his lack of ability to do Blind Flying, had never occurred to either of us, until Major Ocker's experience with, and his absolute belief in, the action of the Bank and Turn indicator crashed head on into the author's knowledge of induced vertigo and the physiological reactions involved in the special senses concerned. Out of the wreck emerged several things of vital importance to aviation.

The foundation sense of all spatial orientation is vision. There is no substitute for visual reference. It makes no difference what the pilot sees so long as it gives him that vital information: "Where is the ground", and what is the position of the airplane with reference to it. Many accidents have resulted from ignorance of this vital principle. Many have resulted because there were pilots who knew they could do Blind Flying by using their "flying sense". There is no longer any excuse for ignorance regarding Blind Flying. Without exception the present-day pilot who can do so obtains training in instrument flying. This is a far different reaction than the general attitude of most aviators when Ocker and Myers announced, in 1926, that "No one could do Blind Flying without artificial aids", and that they "had discovered how to do it". We were both promptly labeled as being enthusiastically crazy.

In the past those pilots who had discovered they could not fly blind, did so through bitter experience. They, however, had nothing of value to report as an aid to their fellow pilots. They merely labeled themselves as better flyers than the average. However, it was noted they avoided fog flying. Having been taught to fly by instinct, it was hard to convince the average pilot that his flying sense would not bring him back from every flight.

A knowledge of the uses to which any

one of the special senses, the care of, and our reactions under all conditions, towards these special senses becomes of vital importance and value only to the individual making special and expert use of that special sense.

The airman being vitally concerned in his ability to sense his position, change of position and relation to the earth's surface has called all his special senses into play and has developed "FLYING SENSE". What is flying sense?

It is not an inherent sense.

It is an acquired sense.

It is something the airman has that others do not.

In its entirety it is composed of the special senses of: Sight - hearing - taste - smell - touch or tactile sense - muscle sense - vestibular or inner ear sense.

Just as there are degrees of "Doctor sense", there are airmen with varying degrees of "flying sense". Being an acquired sense and dependent for its development on the ability, adaptability, aptitude, and knowledge of the person, it is evident, that everything else being equal, the airman who correctly understands and interprets the sensations received from his various senses will have the most "flying sense".

Constant repetition of demonstrations with the Ocker-Myers "Vertigo Stopper Box" finally convinced pilots that it was a real lie detector, and that, on the ground at least, they could not tell which way they were turning, if they could not see. Many continued to fly by instinct in the stubborn belief that these "reverse" reactions could not happen in the air. In answer to this the author, with Major Ocker at the controls, spent some hours in the air as a "Blind Flying" observer, communicating by means of strings to tell him what I thought he was doing from time to time. Major Ocker also rigged up a covered cockpit ship with one exposed control pilot seat, and spent many hours testing out the various reactions of himself and others.

It was proven beyond a doubt that these reactions do take place in the air, and, in addition, are much intensified.

Later, our findings were communicated to the National Advisory Committee for Aeronautics, and elaborate flight tests were made with a covered hood and a control pilot. Their findings verified the theory that circular movement invariably resulted during flights made by a pilot flying in a totally dark cockpit. These findings verified our original contention regarding movement and the production of induced vertigo, and were made by Carroll & McAvoy. They published the following conclusions:

> "Many pilots have felt that the flying sense was largely one of muscular balance and that visual reference played a more or less insignificant part. These experiments should serve to remove this idea and develop the appreciation of the fact that muscular balance plays an extremely small part in flying, excepting in correlation with visual reference in the development of a polished technique. Visual reference of some sort must be provided, either by the horizon, by the reflection of the sun or moon while in dense fog or clouds, or by proper instrumental equipment."
>
> "The fact should not be neglected that the use of proper navigational instruments provides an artificial horizon, if not in a single instrument, then in the correlation of several instruments, such as a turn and bank indicator and an airspeed meter.
>
> It can be recommended to all pilots that a careful self training in the use of and reliance on navigational instruments of this character will provide them not only with definite mechanical assistance, but likewise will go far to remove the psychological hazard of blind flying."

Professor Schaeffer, of the University of Kansas, many years ago conducted experiments with blindfolded individuals, and proved conclusively that spiral movement always resulted when running, walking, swimming, driving a car, etc. Continuing his experiments on the lower forms of life he came to the conclusion that any forward moving organism (including man) would move in a spiral path, provided no orientating sense, such as sight, touch, etc., guided it.

The value of the Ocker-Myers view box became generally recognized as the only means available of instructing pilots and prospective pilots while on the ground in the sensations they would experience and the reactions they would have if they attempted to do Blind Flying without an artificial horizon.

The term "Artificial Horizon" was originated by the author and given the following definition in the original report:

> "Any instrument or combination of instruments that will quickly, easily and reliably give the pilot information that he may mentally visualize in terms of where is the ground."

In the United States Air Service magazine, issue of April, 1928, there appeared an article: "The Artificial Horizon Seeks Recognition", by Frederick R. Neely, in which the research conducted was fully explained.

Instrument Flying and Simulated Blind Flying were the logical outcome of this research work, because there had been established the physiological foundation on which to build the technical superstructure.

Major Ocker, visualizing that it was imperative every student at the Air

Corps Training Center should have this instruction, originated the demonstration box and formulated a course of ground instruction in Blind Flying, which was adopted by the Air Corps as routine in May, 1934. In addition, a routine course in actual Instrument Flying follows the ground instruction.

The Ocker-Myers demonstration box is based on sound physiological principles, and its value as a preliminary to actual Instrument Flying in an airplane is essential, because only in this way can the student be actually shown that he cannot depend on his own sensations when God's horizon is not available.

Myers and Ocker, having solved the problem of how to keep the pilot in the air when he did not have a horizon to look at, it became necessary to solve the problem of guiding him to his intended destination and safely landing him on an airport he could not see.

The development of blind take-off, blind navigation and blind landings was much stimulated by the discovery of the basic principles underlying Blind Flying. Today they are accomplished facts. Many familiar names are linked to this development: Doolittle, Hegenberger, Kingsford Smith, Lindbergh, Umstead, Griffin, etc.

The historical around-the-world flight, led by Captain Lowell H. Smith, Air Corps, was successful, because all of the pilots were strong advocates of Instrument Flying and expert in their use. This flight is all the more remarkable because at this time the research establishing the underlying principles had not been accomplished. They simply knew they had to depend on their instruments if they came through.

Many historical flights have been accomplished since that time, and without exception each and every pilot was an expert in Instrument Flying. These history-making flights include, among others, Lindbergh, New York to Paris; Post and Gatty, around the world; Mattern and Griffin, around the world; Herndon and Pangborn flight; Kingsford Smith, Trans-Pacific; Amelia Earhart, Trans-Atlantic and Pacific; Byrd, Transatlantic, North and South Poles; Lincoln Ellsworth, South Pole.

Recently Major Ira C. Eaker, Air Corps, flew from coast to coast, completely covered in a hooded cockpit - a wonderful example of not only Blind Flying, but of blind navigation.

Lt. Colonel Fitzgerald, who began his flying training in 1914, has continuously been an Instrument Flying enthusiast to the extent that he frequently adopts this method and gets under the hood in perfectly clear weather in order to protect himself from the sun's rays. While there were many other pilots who paid particular heed to Instrument Flying in the old days, the examples cited are mentioned for the purpose of showing that if this type of flying is participated in for a length of time, sufficient to train the pilot in automatic control, he will finally become as proficient as if he were flying in ideal weather. Colonel Fitzgerald states he did not know why he used instruments when the weather was soupy - he only knew he had to if he survived.

The successful blind flier must correlate his senses to his instruments.

To Major Ocker belongs the credit of supplying the original problem for solution and the development and application of the technical aids essential to that solution. His unlimited experience and unflagging interest was a constant stimulation. His development of the Ocker course of ground instruction, now in universal use, shows he has unlimited vision regarding aviation.

To the author belongs the credit of conducting the medical research that resulted in the discovery of the basic underlying principles now universally acknowledged as the solution of the difficulties encountered in Blind Flying, and thus furnishing the basis on which all present-day Instrument Flying is based.

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MERCY FLIGHTS BY KELLY FIELD AMBULANCE

On July 15th, a plane piloted by Lieut. Ken Rogers, with Sergeant S. Birkland as mechanic and Corporal R.C. Cheek as hospital attendant, went to Dallas, Texas, to pick up a soldier from Battery F, 15th Field Artillery, a member of the Texas Centennial Battalion. This man had an acute case of appendicitis, and the Transport C-15 hospital ship returned him to the Fort Sam Houston Hospital.

The same ship took off at 2:25 p.m. for San Diego, Texas, with Captain Donald Olds as pilot, Staff Sergeant F.K.McKowan as crew chief, and Captain B.R. Galbraith Medical Reserve, attached to CCC component, as medical attendant, to pick up a CCC youth, named Eleno Guerra, who was injured in an auto truck accident and was suffering from a compound fracture of one leg. The injured youth was at the CCC camp at Alice, Texas, but there was no field in the vicinity listed as suitable for the Transport. Accordingly, the Post Operations Officer, Major U.G. Jones, went to Alice in a basic training plane looking for a suitable landing place, and the only one he found was a straight strip on the new concrete highway to Alice. After landing there, he made arrangements with the CCC officials to move the injured youth to the landing field at San Diego. Here he was picked up by the Transport plane and brought to the base hospital at Fort Sam Houston. The Transport landed at Kelly Field at 6:15 p.m.

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Special Orders of the War Department announce the appointment of Capt. Bob E. Nowland to the temporary rank of Major, Air Corps, with rank from June 16, 1936.

IMPRESSIONS OF THE FLEDGLINGS

By 1st Lieut. R. T. Coiner, Jr.
Graduate of Class No. 25-B, March-June, 1936.
Transferred to Air Corps from Cavalry; member
of Class, United States Military Academy, 1932.

It is far from easy for such recent members of the winged brotherhood to write coherently on the subject of our initiation. The feeling of relief and of joy at finally having completed the course completely supersedes at times any other feelings or impressions that we may have had. We are intensely proud of having been able to go through the school and are proud also of the happiness in our success and good wishes of our brother officers in the branches of which we were so recently members.

One of the most outstanding impressions gained at the school is the universal desire of all officers to make the new arrival like the Air Corps. We found this to be universally true and, although after a bad day we sometimes felt that our instructors regretted our presence bitterly, a good day in the air changed their minds, we hope - and most certainly changed ours. The eagerness of its personnel to have other people like their branch, and not only to like it but to want to be a part of it, is a wonderful heritage; and now that we are members of the Air Corps we hope that we, in our turn, may do our part towards making our branch well liked.

The intense desire to succeed manifested by the students, and the equally intense desire to have the student succeed manifested by the instructor, is quite noticeable. The student-instructor team, fostering between them this will to succeed in their task, are laying an invaluable foundation for the success of the Air Corps in peace and in war. Any unit in the defense of the nation, whose personnel have as the basis of their military careers the desire to attain the objective developed to such a degree as it is developed in the school, is fortunate, indeed.

Those of us who managed to survive the rigors of the training year cannot help but feel that those who were less fortunate and did not survive have gained much in experience of a military nature that will be of inestimable value to them in the years to come. They cannot help but have a greater sympathy for the Air Corps and its problems, and in carrying this feeling out to the line of the Army they are doing a great and lasting good. They have served in the line, and in going back to the line after their experience in the school, however limited, they quite naturally have the foundation of fact on which to base their comparisons and arguments.

Having served from one to three years in the line, we hope that any experience we have gained in that service is going to make our service in the Air Corps more valuable to the government which has educated us. It is rather awe inspiring to realize what an investment we represent, and on sober consideration and reflection it makes us hope that we in our time may do as much as those before us have done to keep the Air Corps in the same high position that it holds now.

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NEW LIGHTING SYSTEM AT KELLY FIELD

Kelly Field's new night lighting system is rapidly being installed, augmenting the present system by an installation of three Type 9-A floodlights, one of which is installed at the west end of the northwest-southeast runway, which is intended to be the primary runway if and when the new installations are developed on Kelly Field. Another replaces the old floodlight at the southwest edge of the field, and the third replaces the old floodlight in front of the present Post Operations Office. In addition to this, there is a new T which has automatic wind control settings, and a new system of signal lights for night flying control with its necessary cabinet controls located in the night flying control tower and Post Operations Office.

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88TH OBS. SQDN. CELEBRATES REORGANIZATION

The 88th Observation Squadron, Hamilton Field, Calif., was first organized in 1917. It was discontinued after the World War, but in June, 1928, it was reorganized at Fort Sill, Oklahoma. The Squadron celebrated its reorganization on July 3rd at McNear's Beach, Calif. All duties were suspended for the day, and everyone adjourned to the beach early in the forenoon.

Swimming, soft ball, and a fat man's race added to the general gaiety and entertainment. Private "Bing" Carter easily showed his heels to the others in the fat man's race, so that the real rivalry in this event was between Sergeant Sweeney and Private Gardner for second place.

In the first of the two soft ball games, the enlisted men "hit their stride" early in the game and very definitely trounced the officers' team. In the second game, however, the officers started to click and the tables were turned. Too tired to play off the tie, the decision is still a "draw." Ample refreshments were provided.

RECORD BOMBING BY 7TH BOMBARDMENT GROUP

Results of the record bombing conducted by the 7th Bombardment Group, Hamilton Field, Calif., in accordance with TR 440-40, dated March 11, 1929, show that, of the 69 individuals participating who actually fired the course, 66, or 94.6%, exceeded the qualifying score of 1500. Of the three who failed to attain the qualifying score, two did not complete the record bombing.

In this record bombing, the highest score was achieved by two officers of the 31st Bombardment Squadron, each with 1974. Of the 66 participants of the Group who qualified, 28 made scores above 1900; 30 above 1800; 6 above 1700 and 2 above 1600. The 11th and 31st Squadrons qualified 100%. In the 11th, the highest score recorded was 1957 and the lowest 1820. The general average for this squadron, with 25 firing the course, was 1820. In the 31st, with 16 firing the course, there was only one score below 1800, and that was 1790. With 11 scoring above 1900 and four above 1800, the general average for this squadron was 1919.8.

In the 9th Bombardment Squadron, with 25 out of 28 qualifying, the average score of all personnel completing the record bombing was 1823.

All of the bombing practice was conducted at Mather Field, Calif. These squadrons conducted the record bombing training in accordance with TR 440-40, March 11, 1929, by authority of the Commanding General of the GHQ Air Force, in order to secure uniformity of training in all squadrons of the 7th Bombardment Group. These regulations provide for the dropping of 10 bombs from 5,000 feet and 10 bombs from 8,000 feet for record scoring. The total possible score for bombing is 2,000 points. Only the rating of Expert Aerial Bomber is provided for, and the qualifying score is 1500.

Bombing training is now being conducted by the 7th Bombardment Group in accordance with tentative TR 440-40, dated November 26, 1935.

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GENERAL ANDREWS VISITS SELFRIDGE FIELD

Major-General Frank M. Andrews, Commander of the GHQ Air Force, accompanied by Major George C. Kenney, Air Corps, a member of his staff, landed at Selfridge Field at 9:00 p.m., Monday, July 13th, in the new XC-32 Douglas Transport which has aroused widespread commend among aviation enthusiasts. It is equipped with complete office facilities. On July 14th, the General witnessed the climbing test to 20,000 feet of a squadron of P-26's and a squadron of PB-2A's with full military load. This test was for the purpose of comparing the climbing time of each type of airplane. Both officers departed in the afternoon of that day.

HIGH ALTITUDE BOMBING BY 9TH BOMB. SQDN.

The 9th Bombardment Squadron, Hamilton Field, Calif., has just completed a period of high altitude bombing at Mather Field, Calif., during which time a total of 496 bombs were dropped from an altitude exceeding 10,000 feet. The ground temperature averaged 90 deg. F. or above, and was the cause of much discomfort, as the flying personnel had to don heavy flying suits for protection against the freezing temperatures aloft.

This was the first extensive bombing done by this squadron at the high altitude, and much information was derived therefrom. The Martin Bombers were loaded with nine practice bombs, which were dropped individually in nine successive trips over the target. This necessitated remaining at the bombing altitude for over an hour, and enabled the pilots to gain experience in maneuvering the airplanes at high altitudes for a considerable length of time. All pilots found that flying the precise and accurate courses necessary to bombing at this altitude and at the same time using the microphone and inhaling oxygen was very fatiguing. The bombardiers, too, found that manipulating the bomb sight and related controls called for a lot more exertion than at the lower altitudes. Upon return to the ground, those participating in these flights became drowsy and lethargic, and the fatigue appeared to be out of proportion to the time flown. However, as the flying personnel became more accustomed to and proficient at operating at this altitude, the missions became less fatiguing.

It was found that any errors in sighting or releasing the bombswere considerably magnified by the time the bombs reached the ground. Especially was this true of bombs which started their fall as wobblers. Although the scores have not been fully analyzed, it is believed that they determined many of the variables of high altitude bombing.

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FLYING TIME OF 91ST OBSERVATION SQUADRON

During the training year 1936, the 91st Observation, now stationed at Fort Lewis, Wash., with a daily average of seven airplanes in commission, amassed a total of 5,398 aircraft hours. The largest amount of flying done in any one month was in March, when 604 hours were registered, and the least was during February when, due to very bad weather conditions, only 302 hours were flown. In cooperation with other branches of the military service, a total of 542 hours was flown, and a total of 331 hours of night flying was accumulated between foggy nights at Crissy Field, Presidio of San Francisco, Calif.

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The contribution of material from Mitchel Field, N.Y., and Wheeler Field, T.H., will be greatly appreciated.

OLD PLANE DESTROYED BY MACHINE GUN FIRE

Airplane #29-226, which served as a transport for the 3rd Attack Group, Barksdale Field, La., for the past few years, was recently destroyed by machine gun fire. The airplane had outlived its usefulness and had been pronounced unsafe for flying. Permission was secured from the Materiel Division to dispose of the plane in this manner, in order that the effectiveness of raking machine gun fire against an area target and against light material might be determined.

Each fuel tank of the airplane contained approximately 60 gallons of gasoline, and the engines were started and left turning up at 1,000 rpm while three missions were fired. When approximately 100 rounds from each gun had been fired upon the third mission, fire was seen to break out in front of the left motor, spreading rapidly until the ship was a mass of twisted and molten metal. The results of the firing, which had been observed from dugouts made for this occasion, led to the following conclusions:

1. That an area seventy yards wide is a proper target for a three-ship element; that the length of such area depends upon the speed of the airplane and the capabilities of the gun.
2. That sweeping fire over an area is effective against material within the area.
3. That machine gun fire is an effective agent against airplanes on the ground and will immobilize an outfit until all airplanes can be carefully inspected for damage to interior structures.

It is an interesting fact that Staff Sergeant Young, who was the first crew chief on this airplane when it came to the Group seven years ago, was also the last crew chief, and it was he who started the engines for this last time.

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MITCHELL AIR RACE SET FOR OCTOBER 17TH.

Lieut. Colonel Ralph Royce, commanding Selfridge Field, Mich., recently selected October 17th as the date for the running of the Mitchell Trophy Race at Selfridge Field. It is stated that greater speeds are expected to be attained this year, as the First Pursuit Group is now equipped with the new Consolidated PB-2's.

Last year, the winner of this contest, the late Captain Karl G.E. Gimmler, piloting a Boeing P-26A Pursuit plane, averaged 212.6 miles per hour over the 100-mile course. There were ten Air Corps pilots in the competition.

A crowd of approximately 40,000 witnessed the event, which was held under ideal weather conditions.

NAVIGATION SCHOOL AT HAMILTON FIELD

The 7th Bombardment Group's Navigation School is now well under way at Hamilton Field, Calif., under the able instruction of 1st Lieuts. Walter R. Agee and Richard C. Lindsay, Air Corps. The course has been improved and extended to include celestial navigation.

A new class, consisting of 1st Lieuts. Edward W. Suarez (Headquarters); George D. Campbell, Jr., (88th Squadron); Wm. W. Garland (70th Service Squadron), and 2nd Lieut. Paul C. Ashworth (11th Squadron), was started July 6th, with Lieut. Agee as instructor. In addition to the intricacies of drift meters, course and distance computers, and the preliminaries of the "seven flyings,"* the members of the new class have been getting transition on the Douglas OA-4B's and doing water landings at Clear Lake in anticipation of the work which will soon be conducted over the waters of the Pacific.

Another new feature of the Navigation School is the course in Meteorology under the instruction of 1st Lieut. H.H. Bassett, Air Corps, who recently joined the forces at Hamilton Field after spending the past year studying Meteorology at the California Institute of Technology.

A practical application of navigation is to be made shortly, when the 7th Bombardment Group, in collaboration with the 19th Group from March Field, intercepting a ship off the coast near Los Angeles, will simulate a night bombing attack.

* 1. Simple Flying; 2. Traverse Flying; 3. Parallel Flying; 4. Middle-Latitude Flying; 5. Mercator Flying; 6. Great Circle Flying; 7. Composite Flying.

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POST FIELD NOT SO HOT, EH WHAT?

Talking about the weather, the News Letter Correspondent at Fort Sill, Okla., remarks that Post Field proved to be a great disappointment to its residents. They remarked it as the hottest place in existence. Then the newspaper gave the temperature of nearby towns as 120 degrees, thus showing our residents' claim as a "first" down to a poor second with only 113 degrees. They aren't in the cellar position, anyway, and according to the old timers in these parts July is not bad compared with August - so help us.

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The 35th Pursuit Squadron, Langley Field, celebrated its Organization Day on June 25th with an outing at Yorktown Beach, Va. With chicken and barbecue and liquid refreshments, appetites were thoroughly satisfied. In the afternoon a soft ball game between the personnel of 8th Pursuit Group Hqrs. and the 35th Pursuit was morally won by the last named outfit, as Headquarters tired about the 12th or 13th inning and gave up.

BIOGRAPHIES

COLONEL ROY C. KIRTLAND

Colonel Roy C. Kirtland, Air Corps, who was recently detailed for duty in the Inspector General's Department, Washington, D.C., was born at Fort Benton, Montana, May 14, 1874, and was educated in the public schools of Denver, Colo., and Washington, D.C.

Enlisting in the Army on November 8, 1898, he saw service as Private, Corporal and Sergeant, Company M, and Battalion Sergeant Major, 7th Infantry, to August 29, 1901. He was then commissioned a second lieutenant of Infantry and served continuously with this branch of the service until March, 1911, in the meantime being promoted to 1st Lieutenant, May 18, 1905.

Colonel Kirtland is one of the early Army pilots, receiving in 1911 Certificate No. 45 from the Federation Aeronautique Internationale. He also holds Expert Aviator License No. 11 from the Aero Club of America. From April to June, 1911, he was in charge of the U.S. Aviation School at College Park, Md. Later he was on duty as assistant flying instructor. He commanded the 1st Aero Squadron from June to November, 1913, and served as Adjutant, Supply Officer, Disbursing Officer and Quartermaster of the Signal Corps Aviation School at San Diego, Calif., from December, 1913, to April, 1915. He then returned to the Infantry, but rejoined the Aviation Section, Signal Corps, during the War, reporting for duty at Kelly Field, Texas, on October 2, 1917. He was commissioned Major (temporary), Aviation Section, Signal Corps, September 22, 1917. Several days later he was assigned to the command of Taliaferro Field, Fort Worth, Texas, but, due to the exigencies of the service, his duty at that field was of brief duration, for in November, 1917, he was placed on duty with Col. Chalmers G. Hall in connection with organizing four regiments of specially selected mechanics, known as the 1st, 2nd, 3rd and 4th Motor Mechanics Regiments, subsequently redesignated as Air Service Mechanics, and was largely instrumental in solving all problems of efficient organization for these regiments and in the selection of the commissioned personnel therefor. Subsequently he was sent to Camp Hancock, Ga., to take charge of organizing of the regiments at the mobilization camp, and from the beginning of the organization in December, 1917, until the entire four regiments were completely organized, he was commanding officer of the Air Service camp at Camp Hancock and in charge of all matters affecting the organization of the four regiments mentioned. During this time he had under his command up to approximately 12,000 men, all recruits with little or no experience. He was subsequently in command of the 3rd Regiment in France and exercised the functions of regimental commander throughout a period of over six months. Among his other duties overseas were that of inspector of aviation activities in England and commander of the Air Service Rest Camp in that country.

On October 24, 1918, he reported for duty at the Army Line School at Langres, France. Shortly following his return to the United States in January, 1919, he was assigned to the command of the Aviation General Supply Depot at Middletown, Pa. He was relieved from the Air Service in October, 1919, and was attached to the 17th Infantry at Camp Meade, Md., until February 20, 1920, when he was again detailed to the Air Service and assigned to the command of Rockwell Field and the Aviation Supply and Repair Depot at that post.

On August 30, 1920, Colonel Kirtland reported for duty as student at the Army School of the Line at Fort Leavenworth, Kansas. Following his graduation in June, 1921, he continued on duty at Fort Leavenworth as student at the General Staff School until his graduation therefrom on June 23, 1922. Thereafter, until August, 1925, he was Instructor at the General Service Schools at Fort Leavenworth. Following a year of duty as student at the Army War College at Washington, D.C., he was, upon his graduation in June, 1926, detailed for duty as a member of the War Department General Staff, Washington, D.C.

Following the completion of his four-year detail with the General Staff, Col. Kirtland, in July, 1930, was assigned as Commanding Officer of the 2nd Wing, Air Corps, and of Langley Field, Va., also as Acting Commandant of the Air Corps Tactical School. In July, 1932, he was assigned to duty as Air Officer of the 2nd Corps Area, Governors Island, N.Y., and occupied this position until April, 1935, when he was assigned as Air Officer of the 9th Corps Area at the Presidio of San Francisco, Calif. This duty terminated on July 18, 1936, to enable him to take over his new assignment in the Inspector General's Department.

Colonel Kirtland holds the ratings of Airplane Pilot and Airplane Observer. In the early days of the Air Corps he held the ratings of Military Aviator and Junior Military Aviator.

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LIEUT. COLONEL HENRY C.K. MUHLENBERG

Lieut.-Colonel C.K. Muhlenberg, Air Corps, now on duty as Air Officer of the

3rd Corps Area, Baltimore, Md., was born in St. Louis, Mo., November 6,1886, Upon his graduation from the United States Military Academy and being commissioned a second lieutenant on February 14, 1908, he was assigned to the 14th Infantry. Five months later he was transferred to the 30th Infantry, and he served with this organization at Fort William McKinley, P.I., to July 14, 1909, and thereafter at the Presidio of Monterey, Calif., to March, 1911, and on the Mexican Border at San Diego, Calif., to June, 1911.

Detailed to the Ordnance Department on June 20, 1911, Colonel Muhlenberg was on duty at Frankford Arsenal, Pa., as Assistant to the Officer in Charge of Small Arms Ammunition Department for two years; at the Watertown, Mass., Arsenal for one year as a student, and at the Springfield, Mass., Armory during the last year of his four-year detail. From August, 1915, to October, 1917, he served with the 2nd Infantry at Fort Shafter, T.H., following which he was detailed to the Aviation Section, Signal Corps, and assigned to station at Rockwell Field, Calif., to undergo flying training. While at this station he commanded the 14th Aero Squadron. In May, 1918, he was transferred to Wilbur Wright Field, Fairfield, Ohio, and placed in charge of the Testing Department, Technical Section.

From September 13, 1918, to January 8, 1919, Colonel Muhlenberg was commanding officer of the Armorers' School at Wilbur Wright Field. He was then assigned to the Engineering Division at McCook Field, Dayton, Ohio, as Chief of the Material Department. On May 18. 1920, he reported for duty at Rich Field, Waco, Texas, as commanding officer and, after serving in this capacity for several months, he was assigned as Assistant Professor of Military Science and Tactics at the University of Washington, Seattle, and placed in charge of the Air Service R.O.T.C. unit thereat. During the course of his service at the University of Washington, he commanded in the summer vacation periods R.O.T.C. camps at various localities; in 1921 at Post Field, Fort Sill, Okla.; in 1922 at Mather Field, Mills, Calif.; in 1925 at Rockwell Field, Calif.; in 1926 at Vancouver Barracks, Wash., and at the camp in 1928 at the Presidio of San Francisco, Calif., he was Executive Officer. In July, 1927, he assumed the additional duty as commanding officer of the Air Corps Reserves at Sand Point Airdrome, Wash.

Relieved from duty at the University of Washington on January 23, 1929, Col. Muhlenberg was assigned as Air Officer of the 5th Corps Area at Fort Hayes, Columbus, Ohio. On September 1, 1933, he began the one-year course of instruction at the Air Corps Tactical School at Maxwell Field, Ala., and, upon graduation therefrom in June, 1934, he was stationed at Bolling Field, D.C., as commanding officer until January 15, 1935, when he was assigned to his present duty as Air Officer of the 3rd Corps Area.

Colonel Muhlenberg was promoted to 1st Lieutenant, June 6, 1914; to Captain, March 11, 1917; to Major, Signal Corps (temporary), October 23, 1917; to Lieut. Colonel, Air Service (temporary), August 20, 1918; to Major, Air Service, July 1, 1920, and to Lieutenant Colonel, Air Corps, January 28, 1932. He received his rating as Junior Military Aviator on March 16, 1918, which rating was subsequently changed to that of Airplane Pilot.

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72ND PERSONNEL INSPECT LANDING FIELDS

A flight of five Bombers, led by Major I.H. Edwards, commanding officer of the 72nd Bombardment Squadron, Luke Field, T.H., recently departed from that field to make the rounds of all the landing fields on the other islands. The first stop was the Lanai City Airport. Hilo was the next point visited, and the officers and men spent the night at the Kilauea Military Camp. On the following day, landings were made on the fields at South Cape, Upolu Point, Hana and Maalaea, the flight remaining at the last named locality for the night.

Three planes took off the next morning at 6:00 o'clock to enable the personnel to take a look at the sun coming up over the top of Haleakala - a very beautiful sight, indeed. After these planes returned to Maalaea, the flight took off for Kalaupapa (Leper Colony), Homestead and then home. While at Homestead, a truck was rented to take all the personnel to Kaunakakai to meet its unusual mayor, but that individual could not be found. The flight arrived at Luke Field at 12:30 p.m., June 11th.

The 72nd, accompanied by the Observation Squadrons of Luke Field, took off on June 29th for Kauai, landing at Lihue Dairy Field and at Burns Field. All the emergency landing fields on Kauai and Niihau were inspected from the air. The flight remained at Burns Field for the night and returned to Luke Field the following day.

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37TH ATTACK TAKES OVER 19TH AIRSHIP HANGAR

The 37th Attack Squadron is now well established in the former 19th Airship hangar at Langley Field, Va. Operations are being carried on from the small landing area near the hangar. Facilities are being made available which should make the new location adaptable to very efficient operations. The 37th was notified that their first A-17 Attack plane would be ready for delivery before August 1st.

COL. TINKER TESTS NEW BLIND FLYING HOOD

On the morning of July 7th, Colonel C.L. Tinker, commanding officer of Hamilton Field, Calif., cleared that station for March Field in his Martin B-10B Bomber for the purpose of service testing a blind-flying hood, which had been designed by the 19th Bombardment Group and which had been adapted to the B-10B with minor alterations by the 7th Bombardment Group.

After attaining altitude over Hamilton Field, Col. Tinker closed himself under the hood and began his instrument flight over the commercial airline route to Los Angeles. Over San Francisco Bay, he picked up the Oakland radio beam. Approximately 45 minutes later, the Fresno beam was intercepted and flown until the Los Angeles beam became audible. After an elapsed time of 2 hours and 15 minutes, the plane was over Burbank. Here the flight by instrument was interrupted, due to the fact that the March Field beam was not in operation, and the flight was completed by dead reckoning.

At 1:50 p.m., Colonel Tinker cleared March Field for the return flight to Hamilton Field. Upon intercepting the Fresno radio beam, he again closed himself under the hood, and flew by instruments to Oakland. The flight completed, it was ascertained that approximately four hours had been spent under the hood, and a distance of over 600 miles had been covered. Weather conditions were excellent, but the air being unusually rough it made flying very difficult.

This flight demonstrated the feasibility of instrument flying training for military personnel in tactical airplanes. It clearly showed that Bombardment Aviation can and will be able to move out under the most adverse weather conditions. Thorough training in instrument flying will be accomplished by the 7th Bombardment Group in its tactical airplanes, and will no longer have to depend on its one BT for instrument flying training.

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PROMOTION OF AIR CORPS OFFICERS

The following Air Corps officers who held temporary increased were promoted to regular rank as of the dates indicated:

To Colonel: Col. (temp.) John D. Reardan, July 1, 1936.

To Lieutenant-Colonel: Lieut. Colonels (temporary) Joseph T. McNarney, June 26; Edwin B. Lyon, June 29; Hume Peabody, July 1; Earl L. Naiden, July 13.

To Major: Major (temp.) Lowell H. Smith, June 26, 1936.

Lieut. Colonel Glenn I. Jones, Medical Corps, formerly Chief of the Medical Section, Office of the Chief of the Air Corps, was placed on the retired list with the rank of Colonel, July 31, 1936, for disability incident to the service.

FLIGHTS BY THE THIRD WING

Personnel and airplanes of the Third Wing, Barksdale Field, La., were engaged in several interesting missions during the month of June. Perhaps the one which was not only the most interesting but attracted much attention to the Air Corps was a flight of 36 airplanes, composed of 19 Pursuit and 17 Attack airplanes, which staged an aerial exhibition on June 6th at the official opening of the Texas Centennial at Dallas, Texas. The flight, in command of Lieut. Colonel Millard F. Harmon, performed acrobatics and an attack upon ground targets during the afternoon. At night, maneuvers with searchlight batteries from Fort Crockett were executed and several flares dropped, after which an interesting feature was provided those present when "Texas 1936" was spelled through the use of huge six-foot letters. These had been designed and made especially for this purpose by cutting the letters and numbers from wood, wiring in many small bulbs, and attaching them to the bomb racks of the Attack airplanes.

Sunday was spent by the pilots and mechanics in wandering through the Centennial grounds, to which they had been admitted on passes through the courtesy of the Centennial Commission. Sight-seeing busses were available for those who became foot weary.

The flight returned to Barksdale Field Monday morning after congratulations were bestowed upon officers, flying cadets and enlisted men who had worked diligently in order that the mission might be a success. They feel that credit has not only been reflected upon the Third Wing, but upon the Army Air Corps as a whole.

During the time the flight remained at Dallas, operations were made from Hensley Field, where a temporary base had been set up by members of the 60th and 71st Service Squadrons, in charge of Major Roy W. Camblin, Air Corps.

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NEW LIGHTING FACILITIES AT BROOKS FIELD

New airdrome equipment is being installed at Brooks Field, Texas, under the direction of the Construction Quartermaster. A tower for a remotely controlled wind indicator is placed in front of the transient hangar, and a bank of B-9 floodlights are being placed at the northeast end of the field and one bank at the west end of the field. It will be quite some time yet before these lights will be used, as the airdrome is still torn up incident to the construction of the new runways.

Practically all of the commissioned personnel at Brooks Field will participate in the Command Post Exercises of the 3rd Army which will commence about August 15th and last for about a month.

COOPERATIVE MISSIONS BY 3D ATTACK GROUP

The 3rd Attack Group, Barksdale Field, La., performed two cooperative missions during the month of June, the first being flown by the 90th Attack Squadron and the other by the 13th Attack Squadron.

The 90th Squadron dispatched a flight of three A-12 airplanes to Maxwell Field, Ala., from where they were to operate in an attack on ground troops in the vicinity of Fort Benning, Ga., on June 17th. After the attack, which was highly successful by the use of machine guns (simulated) and mustard gas (actual lime water sprayed from two 18-gallon tanks on each plane, loaded at Maxwell Field), the flight landed at Lawson Field, Fort Benning, for a brief conference, then took off for Maxwell Field where they spent the night, returning to Barksdale Field the following day. The flight was participated in by Lieuts. George McCoy (Flight Commander), James L. Daniel and Harvey P. Huglin, pilots, and Sergeant Otis Paris, Corporal Waldo J. Bither and Private Herbert E. Thompson, mechanics.

On June 20th, three A-17 airplanes of the 13th Squadron, piloted by Lieuts. Paul D. Bunker, Jr., W.H. Wise and R.A. Livingstone, with Tech. Sergeant G.W. Mitchell, Staff Sergeant K.A. Huber and Corporal H.V. Hardy as crew chiefs, took off from Barksdale Field for Fort Sill, Okla., where they were joined by three O-43 airplanes from Brooks Field, Texas. These airplanes became the "Red Air Force" in GF Ex. #8 of the graduating class at the Field Artillery School.

During the first two days of the exercise, which opened on the morning of June 22nd, the Red Force repulsed the "Blues" with the use of simulated machine gun and bombing attacks against mall bodies of troops. However, the Blues, after falling back to a fortified position, turned the Reds back in retreat for the remainder of the problem.

The Attack flight was somewhat handicapped in trying to lay a simulated mustard gas barrage when they were forced to use FM smoke instead of the usual lime water spray. Prevailing high winds soon dispersed attempts by pilots to lay the simulated gas, but otherwise the mission was very successful.

The Observation flight proved very effective in locating the rapidly moving targets of the motorized units. Members of the flight were impressed with the way ground troops are absorbing the principles of speedy concealment during air attacks. The horse-drawn outfits were remarkable in their rapid withdrawal from the roads into the trees, bushes or other available cover.

Upon completion of the problem, the Attack flight laid a demonstration smoke screen which met with the approval of all officers present. The flight returned to Barksdale Field on the afternoon of June 26th, and those who participated in the mission agreed that it had been of great instructive value and that, except for the extreme heat, the stay at Fort Sill had been very pleasant.

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THIRD TRANSPORT SQUADRON HAS ANNIVERSARY

The first anniversary of the organization of the 3rd Transport Squadron at the San Antonio Air Depot, Duncan Field, Texas, fell on July 5th. The celebration of the first Organization Day was postponed to July 8th, when a delightful outing was enjoyed amid the groves and by the streams of beautiful Landa Park at New Braunfels, near San Antonio. Attending were Major J.P. Richter, the first commander of the Squadron, and Mrs. Richter; Captain E.D. Perrin, present Squadron Commander, and Mrs. Perrin, and all the enlisted men and their families and guests, to the number of about forty.

Swimming, boating and fishing, with ample refreshments and a general good time, went to make the occasion a great success. The Squadron has reason to look back on its record, as a young organization, with pride and encouragement. The Provisional Squadron was established at the San Antonio Air Depot in February, 1933, with one enlisted man (pilot), to which two were added later, all on detached service from other stations; and continued as such until the organization of the 3rd Transport Squadron as an active unit, July 5, 1935.

Since the beginning of this transport service, down to the end of the organization's first year, a period of 41 months, 312,900 transport miles have been flown, comprising 1223 flights, with a total of 249 passengers carried, 841,000 pounds of freight delivered to other stations, and 518,500 pounds of freight flown in to the Depot. Three planes were employed 15 months, two 18 months, and one the remaining 8 months.

During this first year of the Squadron's organization as an active unit, 351 transport trips were made, with a total of 120 passengers carried, 232,500 pounds of freight delivered to other stations, 170,000 pounds of freight flown in to the Depot, and total mileage flown 96,100. The cost of operation during this period was $12,800. The authorized enlisted strength of the Squadron has recently been increased from 25 to 35, its present strength being 29, including four enlisted pilots.

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Major Edward C. Black is relieved from duty at Langley Field, Va., and assigned to Hamilton Field, Calif., next October.

LONG AERIAL JAUNT FOR 31ST BOMB. SQUADRON

On August 2nd, the 31st Bombardment Squadron, in conjunction with other squadrons of the 7th Bombardment Group, will leave Hamilton Field, Calif., on what promises to be one of the most interesting flights the squadron has ever undertaken. The plans call for a squadron flight to Boise, Idaho, via Reno, Nevada, where the Squadron will operate for about a week, conducting daily flights throughout the region in order to obtain the necessary detailed information relative to facilities available in that area for the accommodation of air units.

While a complete schedule for the flight has not been made, tentative plans call for this Squadron to make the trip with eight of the new B-10B bi-motored Martin Bombardment aircraft. These airplanes are the latest type of Bombers, with a wing spread of 70 feet. They are truly the modern dreadnaughts of the air. Each plane carries a crew of four; the pilot, bomber and gunner, radio operator, and a rear gunner. The plans call for 14 officers, 2 flying cadets and 16 enlisted men to make the trip.

The 31st is one of the oldest squadrons in the Air Corps. It was originally organized as the 31st Aero Squadron at Kelly Field, Tex., in 1917. Soon after its organization, the Squadron proceeded to Issoudun, France, the great Allied training center for airmen. Here its present insignia, the "skull and crossbones," was adopted. The Squadron was on active duty in France from August 22, 1917, to April 4, 1919.

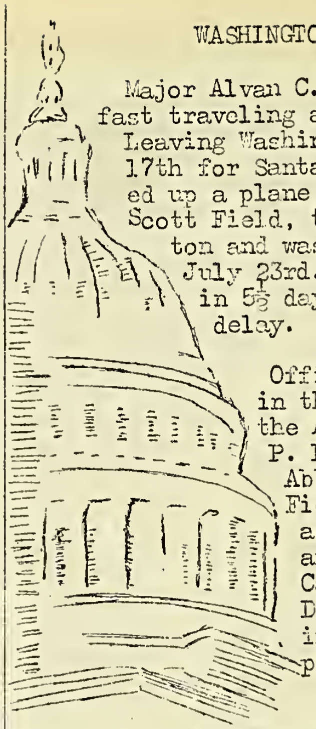
The 31st Aero Squadron was demobilized on April 14, 1919, at Camp Mills, Long Island, but was reconstituted as the 31st Bombardment Squadron on the inactive list on March 24, 1923. On April 1, 1931, it was reorganized and became an active unit of the 7th Bombardment Group at March Field, Calif. In December 1934, the 7th Bombardment Group, including the 31st Bombardment Squadron, moved to Hamilton Field, San Rafael, Calif., where it is now stationed.

Major Harold D. Smith, the Commanding Officer of the 31st Squadron, who saw service during the World War, began his career as a cadet at the ground school at Cornell University. He was commissioned a second lieutenant in the Aviation Section, Signal Corps, April 24, 1918, after completing his flying training at Ellington Field, Houston, Texas. He later completed courses at Langley Field, Va., Taliaferro Field, Texas, and Clermond Ferrand, France. In August, 1918, he was assigned to the 166th Aero Squadron as a Bombardment pilot. The Squadron operated with the First Army, and was a portion of the First Day Bombardment Group. Major Smith wears two bronze stars on his World War ribbon for front line service in two major engagements. After the Armistice he flew in Germany as part of the Army of Occupation. He has been on duty at various Air Corps stations since the War, and has been commanding officer of the 31st Squadron since January, 1934.

Officers and men of the 31st Squadron are

(Continued next column)

WASHINGTON OFFICE NOTES



Major Alvan C. Kincaid performed some fast traveling about both by air and rail. Leaving Washington at 5:30 p.m., July 17th for Santa Monica, Calif., he picked up a plane there, ferried it to Scott Field, took a train for Washington and was back in the office on July 23rd. The trip was completed in 5½ days, including one day's delay.

Officers reporting for duty in the Office of the Chief of the Air Corps were Major Chas. P. Prime and Captain Evers Abbey, both from Mitchel Field, N.Y. Major Prime was assigned to the War Plans and Training Division and Captain Abbey to the Supply Division. Both had served in the Chief's office on a previous occasion.

Colonel Alfred H. Hobley departed on leave of absence on July 15th. Major David S. Seaton returned from leave on July 26th and Captain James C. Cluck on July 18th.

Lieut. Colonel William E. Lynd and Captain M.E. Gross returned from navigation flights to Wright Field. Major Charles Y. Banfill also returned from a navigation flight.

Visitors to the Office of the Chief of the Air Corps recently during the course of navigation flights, or for other purposes, were Brig. General James E. Chaney, Commanding the Air Corps Training Center, Randolph Field, Texas; Lieut. Colonel Carl Spatz, Major Lawrence P. Hickey and Captain Edwin R. McReynolds from Langley Field, Va.; Major Alfred J. Lyon from Maxwell Field, Ala.; 1st Lieuts. T.B.McDonald from Middletown, Pa., Air Depot, and W.P.Sloan from Barksdale Field, La.

Lieut. Colonel Arnold N. Krogstad, Commanding Officer of Kelly Field, Texas, reported on July 21st for temporary duty in the Chief's Office.

Captain R.V. Laughlin left for Wright Field on July 21st.

Major John I. Moore reported from Maxwell Field for duty at the Army Industrial College on July 25th.

31st Bombardment Squadron

Continued from first column

looking forward to this trip, and expect that each day will bring forth new and varied experiences. As a number of cities and airports will be visited daily, this Squadron anticipates a week of interesting events and incidents during its visit to the Northwest.

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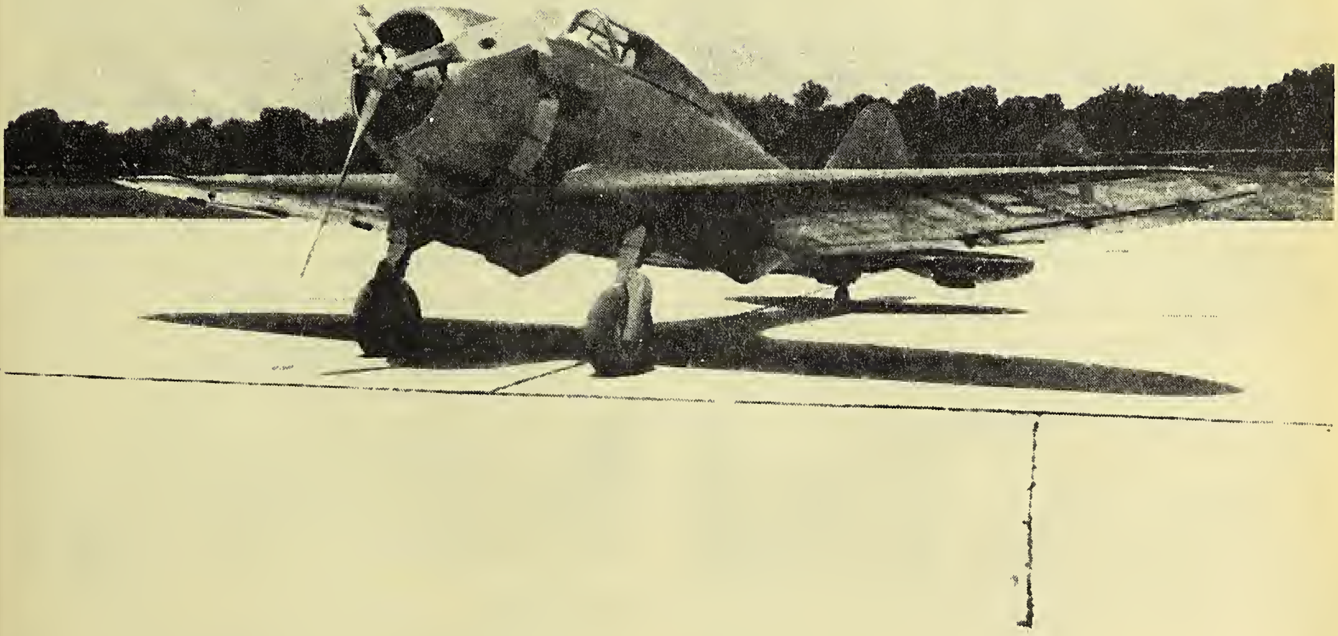
AIR CORPS NEWS LETTER

Issued by the Chief of the Air Corps
Washington, D. C.



VOL. XIX AUGUST 15, 1936 NO. 16

VOL. XIX Air Corps News Letter NO.16

Information Division
Air Corps
August 15, 1935
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE APPLICATION OF AIR NAVIGATION

By 1st Lieut. Norris B. Harbold, Air Corps

Ed. Note: The views set forth in this article represent purely the personal ideas of the author and do not in any sense constitute an official report.

Much has been written upon the subject of Air Navigation Training, but little has been done, as yet, to determine the application of air navigation to the tactical unit.

In the air navigation conducted at the various training units, no attempt was made to determine the equipment and procedure necessary in the various types of airplanes, or to solve the navigation problems of the tactical unit. This was left to the individual after he had been taught all the requirements and possibilities of air navigation with the equipment on hand.

Unfortunately, the attempts of these individuals to complete their progress in training and to carry navigation to the tactical airplane met with disheartening results. The airplanes were not designed with much thought towards accurate navigation, nor was the special navigation equipment available.

However, considering our present tactical equipment - B-10's and B-12's, P-26's, PB's and O-46's, A-12's and A-17's, and assuming that the navigation equipment is available, how many airplanes need be equipped in a squadron, and how should we employ those equipped?

Needless to say, the writer is not prepared to state just what equipment and how this equipment should be placed in these airplanes, other than the B-10 and B-12. This problem, however, now, and more so in the future, should be of great importance to someone, some place. There is little use in building a plane requiring a navigator's presence aboard if some consideration is not given the equipment used by the man responsible for getting it to its destination, the navigator.

To return to our present equipment, we must consider its tactical employment. We are getting away from the formation idea. Nevertheless, the formation retains certain advantages, both in unity of movement (taking off, getting some place and landing with the least practicable delay) and in attack. For these reasons and in consideration of the size and range of our present equipment, it is not feasible that the individual airplane be completely equipped for the more advanced stages of air navigation, except in the case of long range reconnaissance.

Let us look, therefore, to the next larger unit, the flight. Since one of anything is useless, it being normally out of commission or indisposed, we would like to have at least two navigation airplanes and two navigators but, since the basic squadron consists of three flights, we might as well equip three airplanes completely and have three trained navigators.

In Bombardment aviation this should work out very well. If the three flights are rendezvousing independently, they are each equipped with a navigator; if the squadron moves together there are two spares. Considering the airplane crew in the present B-10 and B-12, it is quite possible to crew three airplanes (flight leaders) with officer pilot, bomber and navigator.

In single-seater Pursuit aviation, the problem is a bit difficult, but with their limited range and probable radius of action in actual combat, no great facilities are required.

In biplane Pursuit and in Attack aviation there should be no great difficulty in equipping three airplanes (flight leaders again) with the necessary equipment and crewing the flight leader's airplane with two officers, pilot and navigator.

Observation aviation will normally operate within fairly limited radius, so there is no great need for all the navigation equipment. However, as in the other types, flight leaders could be equipped. In the case of long range reconnaissance, most operations would be by individual airplane, but the necessary size and range should permit the required installations and the proper crew to include a trained navigator.

Summing up the results in the matter of sets of equipment and trained personnel, they are not such as to demand an extravagant layout of equipment or another Training Center to provide the personnel. In the present Bombardment, Attack and PB Squadron we would only need three airplanes equipped for navigation and three trained navigators - not an exorbitant requirement.

The question of air navigation training in this limited equipment arises. It is still possible, however, to acquire considerable knowledge and experience in the standard airplane when the training is approached systematically and intelligently, with progressive training within the flight in the airplanes completely equipped.

Also, and again, there arises in the minds of the uninitiated the vision of a sextant gathering from the sun, moon and stars all the necessities for air navigation. We wish it were so, but, unfortunately, celestial navigation is only a part of the game and our sextants are not as accurate as we would like them to be. Further, the accuracy of dead reckoning is considerably greater than that of celestial navigation within the range of present airplane equipment. Consequently, we advise and recommend that in all types of airplanes enumerated herein, celestial work be used only for training purposes, looking towards the day when we will fly for thousands of miles with only "a star to guide us by" and a ------ good navigator.

ANOTHER THOUGHT ON NAVIGATION TRAINING

By Major Charles P. Prime, Air Corps

I have just had occasion to see the foregoing article by Lieut. Harbold, formerly Assistant Instructor at the Advanced Air Navigation Unit at Rockwell Field, Calif., and now stationed at March Field, Calif.

It is very refreshing to see that others besides those specifically charged with the fostering of air navigation training are taking an interest in this comparatively new subject (so far as the Army Air Corps is concerned). Is is only by the constructive thinking of numerous individuals and a pooling and comparison of ideas that real progress can be made in these matters. The reason for the lack of progress before the Army carried the air mail was that not much time was devoted to the study of this very important subject. Also, there was not sufficient modern navigation equipment for this advanced type of training. Suddenly, it was realized that if the Air Corps was to fulfill its mission it would have to be able to fly by celestial navigation or dead reckoning and not continue to follow "the old reliable iron compass" - the railroad tracks, as was done by expert pilots for many years.

That many of the criticisms made by Lieut. Harbold are well founded is shown by the fact that training directives now emphasize in strongest terms that the training must be for the purpose of developing the flying capabilities of tactical units under all conditions. Not only are competent navigators being trained for units, but for all the crews of long-range planes of all types. The policy is to train competent crews in the various specialties required for the proper performance of long flights without reference to terrestrial check points.

A Board of Air Corps officers has just completed an exhaustive study on the types of navigation instruments to be installed in the various types of tactical airplanes. Much of the equipment necessary to solve the questions brought up in the above article has but recently been developed and is now being procured. Experiments are also under way for the development of better navigation instruments and better navigation methods. As soon as satisfactory instrument landing apparatus and efficient de-icers are procured, we can look to considerable advancement being made in this acticity.

Ed. Note. With the importance of aerial navigation steadily mounting, for various reasons, it goes without saying that flying personnel are giving more serious thought to this subject than ever before.

No doubt many of them hold constructive ideas on this all-important subject but, as seems to be the case at organization meetings where there are discussions on one subject or another, there is a tendency on the part of many present, through modesty or fear that their ideas are not worth expressing, to hesitate to take the floor.

It is gratifying to note that at least two officers have ventured to come out in print and express their views on the present system of navigation and methods of training. These views may not necessarily coincide with those held by the Air Corps, but it shows that they have given serious thought to the proposition.

Now that the ice has been broken and there is in print comments from at least two sources, it is hoped that other Air Corps officers will give the News Letter the benefit of their opinions. Let there be an open forum discussion - this is one of the objects of the News Letter.

If we are going to have a real Air Corps, we must have constructive criticism, for this is the very life of progress.

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Technical Sergeant C.O. Porter, of the 81st Service Squadron, Kelly Field, Texas, was placed on the retired list on July 31, 1936, after 30 years of service in the Army.

CHANGES IN AIR CORPS N.C.O. PERSONNEL

One Master Sergeant and two Technical Sergeants of the Air Corps were recently placed on the retired list, and one Master Sergeant (Ralph J. Rumpel, of Fort Sill, Okla.,) was killed in a balloon explosion. The retired noncommissioned officers are Master Sergeant Herbert H. Bertram and Technical Sergeant John H. Kendall, of Scott Field, Ill., and Technical Sergeant Clarence O. Porter of Kelly Field, Texas.

The following noncommissioned officers were appointed Master and Technical Sergeants, Air Corps:

Master Sergeants

Name	Present Station
Tech. Sgt. Otis K. Lee	Chanute
1st Sgt. Edward J. Wright	Brooks
Tech. Sgt. Frank S. Davis	Langley
Tech. Sgt. Estes Lamb	Barksdale
Tech. Sgt. August Finch	March

Staff Sergeants to Technical Sergeants

George A. Eggeling	Kelly Field
Edward P. Polaska	Randolph Field
John T. Hoyle	Kelly Field
Max Eisenberg	Philippines
Walter W. Fry	Langley Field
Elza L. Higbie	Maxwell Field
Robert B. Norris	Mitchel Field
Clarence G. Culver	Fort Bragg
Lee Robinson	Selfridge Field
John F. Moran	Hamilton Field
William Hoffman	Selfridge Field
Edward A. Jusko	Chanute Field
Willie E. Newman	Selfridge Field
Forest Smith	Barksdale Field
Charles R. Bikle	Mitchel Field

NOTE: In a redistribution by the War Department in July of noncommissioned officers of the Army, the Air Corps was allotted three additional Master Sergeants and eight additional Technical Sergeants.

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KELLY FIELD OFFICERS TO TECHNICAL SCHOOL

The following Air Corps officers recently left Kelly Field, Texas, and will attend the next class at the Air Corps Tactical School at Maxwell Field, Ala.;

Major U. G. Jones
Captain Orvil A. Anderson
Captain W. E. Whitson
Captain Joseph Smith
Captain J. A. Laird, Jr.

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Barksdale Field, La., was honored recently by the visit of Mrs. Barksdale and Mrs. O'Keefe, mother and sister, respectively, of the late Lieut. E.H. Barksdale, in whose honor the field was named. The two visitors spent several hours at the field with General Brant and other of their friends.

ENGINEERING SCHOOL GRADUATION EXERCISES

Commencement exercises of the 1936 Class of the Air Corps Engineering School took place on July 31st in the Auditorium at Wright Field, Dayton, Ohio.

Brigadier General A.W. Robins, Chief of the Air Corps Materiel Division and Commandant of the Engineering School, after a brief address to the students in which he praised the zeal shown by the individual members of the class and encouraged them to continue in the original development work for which many of the class had shown particular aptitude, awarded the diplomas. Wright Field personnel, families of the graduates, the Mayor of Dayton, Mr. C.J. Brennan, and other distinguished Dayton citizens were in attendance.

After the exercises, the students of the class were hosts at a luncheon given at the Patterson Field Officers' Club in honor of General Robins and members of the School Staff and Faculty. Wright Field officers reciprocated that night with a dance in honor of the outgoing class and the officers who had reported for the 1937 class.

Lieut. R.P. Swofford, Jr., a member of the 1936 Class, will serve as Assistant Commandant of the present class to replace Major F.M. Hopkins, Jr., who will take the course at the Air Corps Tactical School at Maxwell Field.

Of the graduating class of nine officers, six were retained for service with the materiel Division, namely, Lieuts. William T. Colman, Howard M. McCoy, Paul E. Shanahan, Pearl H. Robey, Marshall H. Roth and Ralph P. Swofford, Jr. The other three officers, Lieuts. Edwin S. Perrin, Charles K. Moore and Frederick R. Dent, Jr., will take aeronautical courses at the University of Michigan, California Institute of Technology and Massachusetts Institute of Technology, respectively, at the completion of which it is anticipated they will return to the Division.

The following-named officers of the Air Corps reported for the 1937 Class of the Engineering School, which started work on August 1st, viz: Captains John G. Moore, Raymond E. Culbertson, Lieuts. Eugene H. Beebe, Thomas B. McDonald, Donald J. Keirn, Donald L. Putt and Howard G. Bunker.

Three other Air Corps officers, Lieuts. Louis E. Massie, Samuel O. Redetzke, and Herbert H. Tellman, are now attending classes at other educational institutions, and will report about August 21st.

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Featuring the cover page of this issue of the Air Corps News Letter is a photograph of the new Seversky Pursuit plane, contract for the construction of 77 of which was recently awarded to the Seversky Aircraft Corporation.

POST OPERATIONS AT HAMILTON FIELD

By Private A.A. Saklem, Chief Aircraft Dispatcher.

Situated in a modern office facing the landing field is Post Operations of Hamilton Field. Its exterior walls are decorated with modernistic symbols of the Air Corps, and within them beats the pulse of the post.

The regulations which set down the scope of this office make it versatile and interesting. It is a central activity recording from day to day the actions and vicissitudes of the field it serves, administrative as well as flying. The work covers record keeping, aircraft dispatching, charge of the Technical Library, and the maintenance of a goodly number of maps and charts. Pilots on cross-country flights are kept account of by radio or teletype communication, and the arrival of visitors is predicted by the same means.

During May and June of this year, visiting pilots from the east were led in rank by General Andrews, General Arnold and Colonel Burwell. General Clagett came to Hamilton Field three times within the same period, he being one of many who have come from March Field and other points south.

Strange airplanes appear from time to time. On May 19th, the Operations personnel crowded to the windows and stared in awe as an OA-5 settled itself heavily on the landing mat, taxied up to the flying line and twitched itself into a comfortable position on the concrete apron. This giant amphibian, piloted by Captain Goss, ventures far out over the ocean where the fine points of air navigation are practiced. Its several compartments are equipped with elaborate instruments and calculators to supplement the already impressive array confronting the pilot. The message recording its departure from March Field read: "March Field to Hamilton Field, via the Pacific Ocean."

Lieut. Horton, of Randolph Field, treated this station to its first look at the new Seversky Basic Trainer (BT-8), several of which are being built to train the future pilots of the Air Corps. Being a low-wing monoplane of a strictly streamline design, it forms an incredible contrast to the biplane formerly used for the purpose.

Six new Attack planes (A-17's) led by Major Duncan, of March Field, recently roared over the hangars and settled lightly on the landing mat. These sleek, low-wing monoplanes follow essentially the design of later preceding Attack planes. They are characterized by a large wing surface which makes it possible for them to maneuver easily and skim close to the earth in safety.

Civilian planes occasionally enter the field, presenting a colorful variety of people and planes. A stately Vultee, owned by Mr. George P. Fuller, landed here on July 3rd to rest a moment in the course of its travels. The pilot displayed a photograph of Mr. Fuller's private landing field. It is in a rugged country walled in by California's forest trees.

Bill Monday, a Wyoming rancher, recently saw reason to land at Hamilton Field and stepped forth from his Ryan cabin monoplane, dressed in a city suit topped off by a five-gallon hat. The hat was fine, but the take-off when he left was even better. Facing the wind at one end of the mat, he suddenly dug spurs into the Ryan and rocketed into the sky, mounting high above the mat before he had traveled its length.

Then there was a local boy in a not very new biplane, who landed with the bolts of his top cylinder not very tight. The Alert Crew fixed it up, and he flew away much happier. So life goes in Post Operations, one of the three fingers supporting the bird.

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GUNNERY PRACTICE FOR 3RD WING PERSONNEL

During the month of July, both the Attack Group and the Pursuit Group stationed at Barksdale Field, La., were engaged in aerial gunnery for qualification of personnel. The 20th Pursuit Group conducted their practice on the gunnery range at the post, while the 3rd Attack Group staged their exercises at their former home, Fort Crockett, Galveston, Texas, with one squadron occupying this field for a seven-day period, after which other squadrons followed for like training periods.

Somewhat of a record was established by the personnel of the Attack Group in that only two men failed to qualify as "Expert" during this gunnery practice.

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INSTRUCTION COVERING AUTOMATIC PILOTS

A class of instruction in the operation and maintenance of automatic pilots was started on July 15th in the Equipment Branch of the Materiel Division at Wright Field, Dayton, Ohio. This instruction, scheduled to extend over a period of thirty days, is being taken by representatives from the Fairfield Air Depot, Middletown Air Depot, Chanute Field and Wright Field.

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Major Alexander P. de Seversky, one of the foremost designers of aircraft, visited Barksdale Field, La., on a recent flight and demonstrated the maneuverability of his new plane which is expected to be standard equipment in the near future.

METEOROLOGY IN RELATION TO AVIATION

By the Bolling Field Correspondent

TO know the weather conditions from hour to hour requires much work, study and patience by the meteorologist in keeping abreast with modern aviation. At Bolling Field, Captain W.H. Wenstrom, Signal Corps, Meteorological Control Officer, Third Corps Area, compiles and distributes weather information to all stations in this Corps Area. He maintains and collects this weather data for the Air Corps from meteorological stations which are located at Bolling and Langley Fields, Aberdeen Proving Ground and Edgewood Arsenal. Special weather-reporting stations are also located especially to serve the needs of the Air Corps and distinct from the weather-reporting stations maintained by the Weather Bureau. These are operated by civilian observers under contract. One station is at the Admiral Byrd Airport at Winchester, Va., which is 700 feet up, 60 miles from Washington, with a fair landing field, daytime hangar and flying service. From here one can view the Shenandoah Valley, the Blue Ridge to the southeast, and eastern Allegheny outpost ridges to the northwest.

Another station is at Frostburg Ridge (Big Savage Mountain), two miles west of Frostburg, Maryland, 115 miles from Washington, and 45 miles from Uniontown, Pa. The elevation is 2850 feet. The visibility is unobstructed to east and west. On clear days, observers can see Martin's Mountain, 20 miles to the east, and Meadow Mountain, 12 miles to the west.

Some 2900 feet up, 30 miles from Uniontown, Pa., is Keyser Ridge. From this station visibility is unobstructed in all directions, and on clear days observers can see, to the east, Negro Mountain (3 miles), Meadow Mountain (10 miles) and Frostburg Ridge (15 miles); and to the west, Winding Ridge (5miles), and Woodcock Hill (5 miles). Farm fields on the ridge top near the station could be used as emergency landing fields. These stations observe weather daily, including Sundays and holidays, and their reports are forwarded by commercial telephone or telegraph to Bolling Field or Pittsburgh, Pa., where they are added to the Mid-Eastern Air Corps Alert Net hourly weather broadcast.

The weather service on this route is intended to cover only daytime flying under fair-to-good weather conditions. At night, or in really bad weather, the Washington-Frederick-McConnelsburg-Buckstown-Pittsburgh Airway is generally used. This is known as the commercial airway and is equipped with 24-hour teletype service and every other technical aid to flying. This route to Dayton, Ohio, from Washington is only 27 miles greater by air than the direct route. There are stations located also at Skyland, Virginia, CCC Camp #334, on top of the Blue Ridge Mountains at 3500 feet altitude, about one mile southeast of Skyland Summer Camp and about 7 miles southeast of Luray, Va. This station guards Washington and vicinity from the southeast, giving advance notice of the approach of storms from that direction. Skyland is on the direct air route between Langley Field, Va., and Uniontown or Pittsburgh, Pa.

At another CCC Camp, #1318, located 4 miles southwest of Snow Hill, Md., on the eastern shore, another station guards Washington and vicinity from the southeast, giving advance notice of fog and other unfavorable weather moving in from the ocean. This station is on the direct air route between Langley Field, Va., and Mitchel Field, N.Y. These stations observe the weather on week days. Their reports are forwarded to Bolling Field about 20 minutes after each observation, and they, too, are added to the Mid-Eastern Air Corps Alert Net hourly weather broadcast. At Bolling Field this weather data is posted on weather boards and maps for convenient reference to pilots. The boards are arranged according to routes, and show at a glance the general conditions along the three particular routes from Washington - North, South and West, and along part of the eastern coast.

This information is supplemented by a ground glass map board, 40 inches by 60 inches square, which shows an outline and general topography of the flying region, location and names of all weather reporting stations. The map is posted in colored chalk hourly, using at each station a white "G" to indicate "Good," a yellow "P" to indicate "Poor," and a "D" to indicate "Dangerous." The map thus gives a general idea of the geographical distribution of flying weather conditions with respect to the routes flown. Weather blackboards, or files of weather-reporting sequences, can be used in conjunction with this glass regional map. In addition to showing the geographical distribution of weather, the map serves as a key map showing the location of weather stations listed on the blackboards or sequences.

With the rapid progress of aviation, the meteorological control officer is constantly striving to improve the service rendered by the meteorological department to the Air Corps. New ideas are continually being experimented with, and the more practical ones added to common use. These efforts are milestones along the way to making flying safer and surer under all weather conditions.

THE 31ST BOMBARDMENT SQUADRON

THE 31st Bombardment Squadron at Hamilton Field, Calif., holds a unique place in the GHQ Air Force for this year. The News Letter Correspondent states that it is the only Bombardment Squadron on the West Coast and, it is believed, the only Squadron in the GHQ Air Force which has completed training of all its personnel under the new TR 440-40.

The 31st Squadron spent the month of May at Mather Field, Sacramento, Calif., where all the pilots in the organization completed bombing under the new TR 440-40.

Many difficulties were encountered. It was early found that the new Training Regulations were not to be compared with the old. Cruising speed and high altitudes, along with the constant changing of direction, gave rise to many new problems. While bombing at high altitude, winds as high as eighty miles per hour were encountered. Consequently, the bombardier was given a very thorough test of his ability. The 4000-foot course was found quite dangerous from a wholly unexpected angle. The air around Mather Field during May is extremely rough, and two bombardiers received black eyes from hitting their heads on the bomb sight. There was a serious thought of submitting an Unsatisfactory Report on the bomb sight and requesting the Materiel Division to furnish a crash pad for these emergencies.

A very efficient two-way radio set-up was maintained at all times between the airplanes on the range and the ground spotting towers. Two airplanes were on the range at all times. Each pilot would call the ground station each time he headed for the target to give his number and the direction in which he was heading. As soon as the bomb left the airplane he would call again and report - "No. 3, heading south, bomb away, etc." Consequently, the men in the spotting towers knew which airplane had dropped the bomb and which direction it was heading before the bomb hit the ground.

During the month of June, all combat personnel of the Squadron completed firing the gunnery course under the new TR 440-40. The Squadron conducted its gunnery from Hamilton Field as a base. All firing was done on the range over the ocean, just north of the Golden Gate. No serious difficulties were encountered during the firing of the gunnery course, although machine gun jams and fog slowed up the schedule somewhat.

During the past year, the 31st Squadron participated in all Group and Wing Maneuvers and concentrations. The various Group, Wing and GHQ concentrations in which the 31st Squadron took part are listed below:

Salt Lake City, Utah: July 22 to July 25, 1935.
March Field, Calif.: September 3 to September 6, 1935.
Merced and Coalinga, Calif.: November 4 to November 17, 1935.
Vero Beach and Miami, Fla.: November 29 to December 19, 1935.
Muroc Dry Lake, Calif.: March 7 to March 19, 1936.

Squadron maneuvers in which the 31st Squadron operated alone were as follows:

Medford, Oregon: August 18 to August 24, 1935.
Mather Field, Calif.: October 11 to October 28, 1935.
Mather Field, Calif.: May 1 to May 29, 1936.

It is self evident that since the inception of the GHQ Air Force, the 31st Squadron has become a highly mobile unit and has had practical experience in sustaining itself in the field, both as an individual unit and as a subordinate unit in the 7th Bombardment Group. With the advent of the new Fiscal Year, the 31st Squadron can look back over an active year in which practically all the southern and western portions of the United States was covered by one or more flights.

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GUNNERY AND BOMBING BASE AT VALPARAISO

In view of the fact that the Government has been offered, free of cost, a partially developed airdrome and other lands in the vicinity of Valparaiso, Florida, and it has been determined that these lands are well suited for a gunnery and bombing base for the Air Corps Tactical School at Maxwell Field, Ala., and for certain other Air Corps units located in the 4th and 8th Corps Areas, the Secretary of War has expressed the desire that the necessary steps be taken to have the lands referred to accepted under the authority contained in the Act of Congress, approved August 12, 1935 - Public 263, 74th Congress (Wilcox Bill).

It is stated that urgent military necessity exists for the development of aerial gunnery and bombing ranges in several sections of the United States for the proper training of Air Corps units and personnel and, further, that there is reasonable assurance that Relief Funds will be made available for further development of the Valparaiso Airdrome as soon as it passes to Federal ownership, thus insuring the early availability of a necessary training facility.

Valparaiso, which is about 150 miles south of Maxwell Field, is on the Choctawwhatchee Bay, which is an arm of the Gulf of Mexico.

EXIT TWO MEMBERS OF "THE MEN ON A FLYING TRAPEZE."

STAFF Sergeant John H. Williamson and Sergeant William C. McDonald, Air Corps, members of the famous aerial acrobatic team which earned international renoun as "The Men on a Flying Trapeze," recently purchased their discharge from the Army, and boarded an ocean liner bound for China to join the teaching staff of Marshal Chiang Kai-Shek's Central Aviation School at Hangchow, near Shanghai. With them went Lieut. Sterling S. Tatum, until recently a member of the 106th Observation Squadron, Alabama National Guard.

McDonald and Williamson, who held commissions as lieutenants in the Air Corps Reserve, together with Major Claire L. Chennault, Air Corps, leader of this famous aerial acrobatic trio, constituted one of the chief attractions for the past several years at the annual air races both at Cleveland, Ohio, and Miami, Fla. As a flying team doing "war maneuvers and acrobatics," they performed feats heretofore considered impossible. Wingovers, slow and snap rolls, loops and, finally, a turn and a half of a spin were executed with a perfection such as would make it seem as if the three planes were activated by one mind. As tending to shed further light on the amazing feats of this flying team, a Florida newspaper covering the All-American Air Races at Miami last December stated:

"There was a great surge of approval when the crowd recognized the Army's 'Three Men on a Flying Trapeze,' as they speeded over the edge of the airport. These expert Army fliers * * * staged the 'stunts' which brought world fame to themselves and renoun to the military service which they represented. Their work included the longest series of maneuvers ever presented in Miami. One spectacular feat was a roll within a roll in which the planes revolved around each other while barrel rolling individually. The expertness of this maneuver brought cheers from the crowd. Then, too, there were the half rolls while completing a loop and Immelman turns. These marvelous turns, at the top of a loop, pulled in V formation, were amazing."

Major Chennault, Lieut. Williamson and Lieut. Haywood Hansell, Jr., constituted the original "Three Men on a Flying Trapeze," but the last-named officer, being detailed on other duties, was supplanted on the team by Lieut. McDonald. While the team was in Cleveland in 1934, it was given the title by which it has since been known.

According to newspaper reports, Lieuts. McDonald and Williamson were several times approached by an envoy of the Chinese government who offered them very attractive positions in the Chinese Air Service.

The two Army Pursuiters, hoping to secure permanent commissions in the Air Corps, at first declined the proposal. Unsuccessful in their effort to win a place among the first 52 out of the approximately 475 candidates, all graduates of the Air Corps Training Center, who took the mental examination last year for appointment as second lieutenants in the Regular Army Air Corps, and now nearing or having already passed the age limit for eligibility for such an appointment, they evidently decided that it was to their interest to accept the offer of the Chinese government.

Lieut. Williamson was born at Dyson, S.C., April 18, 1906. He attended the graded schools at Ninety Six, S.C., and, after two years of high school at Washington, D.C., he attended the Agricultural and Mechanical College at Clemson, S.C., for two years. Returning to Washington, he attended George Washington University for one semester. While employed in the U.S. Patent Office, he applied for and received an appointment as a Flying Cadet in the Army Air Corps. He completed the course at the Primary Flying School at Brooks Field, Texas, June 29, 1928, and graduated from the Advanced Flying School, Kelly Field, Texas, on October 26, 1928, specializing in Attack Aviation. Rated an "Airplane Pilot" and commissioned a second lieutenant in the Air Reserve, he was assigned to active duty at Fort Crockett, Texas, with the Third Attack Group. His active duty tours were from November, 1928, to September, 1929, and from October 1, 1930, to June 30, 1931. On September 18, 1931, he enlisted in the Air Corps as a Private, and during the course of his enlistment was promoted to Corporal and to Staff Sergeant. On March 17, 1933, he was promoted to 1st Lieutenant in the Air Reserve.

On September 18, 1934, Lieut. Williamson reenlisted for three years in the grade of Staff Sergeant at Maxwell Field, Ala., at which post he was stationed during his entire enlisted service. Lieut. Williamson is married.

Lieut. McDonald was born at Pratt City, Ala., May 24, 1906. Completing 7 years of grammar school and 4 years of high school, he attended Washington and Lee University for one year, Birmingham Southern College for one year and Howard College for two years.

While a member of the 106th Observation Squadron, Alabama National Guard, he received appointment as a Flying Cadet in the Air Corps. After graduating from the Primary Flying School, Brooks Field, Texas, February 27, 1931, and from the Advanced Flying School, Kelly Field, Texas, June 26, 1931, specializing in Pursuit Aviation, he was rated "Airplane

Pilot," commissioned second lieutenant in the Air Reserve, and assigned to active duty with the 1st Pursuit Group at Selfridge Field, Mt. Clemens, Mich. Relieved from active duty on August 31, 1932, Lieut. McDonald enlisted as a Private in the Air Corps at Maxwell Field, Ala., December 20, 1932. During the course of his enlistment he was promoted to the grade of Sergeant. He was promoted to 1st Lieutenant in the Air Reserve on July 9, 1934.

On December 20, 1935, Lieut. McDonald reenlisted at Maxwell Field in the grade of Sergeant. He held the Specialist rating of Air Mechanic, 2nd Class.

He became a member of the mythical Caterpillar Club on April 15, 1935, when engine failure while flying in the vicinity of Ashland, Ky., with no suitable place within gliding distance upon which to land, forced him to resort to an emergency parachute jump in order to save his life.

Both Lieuts. Williamson and McDonald hold a Department of Commerce license as Transport Pilot. The first-named recently passed the 3,000-hour mark in total flying time, while Lieut. McDonald accumulated over 2,500 hours.

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ARMY PILOT JOINS PAN AMERICAN AIRWAYS

March Field recently furnished another pilot to the commercial air service with the addition of Private, 1st Class, Duncan J. Powers, 32nd Bombardment Squadron, to the apprentice pilot staff of the Pan American Airways at Brownsville, Texas.

For a year and a half Powers will attend classes in ground work at Brownsville before going on regular flights as a co-pilot. The only flying he will do during this 18-month period as an apprentice pilot will be on familiarization flights where he will have opportunities to keep his hand in as a pilot.

Powers, son of Mrs. Charlotte Powers, of Los Angeles, Calif., graduated from the University of Southern California in 1931 with the degree of Bachelor of Arts. He had previously graduated from the Polytechnic High School in Los Angeles in 1926. While at the University of Southern California he was active in athletics, especially in track, where he made the varsity low hurdling team from 1929 until 1931.

Powers was scheduled to report on August 1st to Mr. D.G. Richardson, Manager of the Pan American Airways, Western Division, at Brownsville, site of the school, doffing the sand tan khaki of the Army Air Corps for the blue and white of the PAA.

A graduate of the Primary Flying School, Randolph Field, and the Advanced Flying School, Kelly Field, Texas, in 1933, Powers has served on active duty at Hamilton and March Fields as a second lieutenant in the Air Reserve. He enlisted for March Field several months ago.

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21ST PHOTO SEC. DEPARTS FOR MANEUVERS

Eighteen enlisted men of the 21st Photo Section left Scott Field, Belleville, Ill., August 4th, in a convoy comprising one motorcycle, one passenger truck, two cargo trucks and two photo trucks enroute to Allegan, Michigan, where the organization will take part in the maneuvers of the Second Army. On August 6th, 1st Lieut. Kurt M. Landon, commanding officer of the 21st Photo Section, accompanied by Master Sergeant Nico G. Loupos, of that organization, and Sergeant Wesley T. Cummins, airplane mechanic of the 15th Observation Squadron, departed from Scott Field in a C-8 photographic plane for Allegan, planning to arrive there at approximately the same time as the truck convoy.

The two photographic trucks, borrowed for the Second Army maneuvers from Chanute Field, Ill., are equipped for developing films and making prints in the field during the maneuvers.

Working in conjunction with the umpires of the Second Army, the 21st Photo Section will make photographic records of all troop movements and will complete mosaic maps and other routine work as speedily as possible, thus simulating real war conditions. This is the first time the organization has actually gone out into the field on maneuvers.

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AVIATRIX 404 FEET SHY OF ALTITUDE RECORD

Mlle Maryse Hilsz, one of the foremost French women pilots, during a flight on June 23rd, fell short by 404 feet of equalling the world's altitude record of 14,433 meters (47,352 feet) now being held by Commandant Renato Donati, of Italy, who established this record on April 11, 1934.

Mlle Hilsz, flying a Potez type 506 airplane, powered with a Gnome-Rhone K-14 engine, took off from the Villacoublay airdrome at 5:11 a.m., attained an altitude of 14,310 meters (46,948 feet) and landed at the airdrome an hour and 11 minutes later. The airplane she flew had previously been used by the late G. Lemoine (France) who, on September 28, 1933, at Villacoublay, reached 13,661 meters (44,819 feet).

Mlle Hilsz's record (feminine category) received the official recognition of the Federation Aeronautique Internationale, the world's aviation governing body.

Mlle Hilsz holds one other altitude record for a lighter type of plane, in which she reached 7,338 meters.

U. S. AVIATORS LEAD IN WORLD'S RECORDS

According to the Bulletin of the Federation Aeronautique Internationale for July, 1936, listing as of the first day of that month a total of 128 official world's records in both heavier-than-air and lighter-than-air, American aviators lead all other nations with 49 records. France follows with 35 records, Italy with 26, Germany and Poland with 8 each, and Great Britain with one.

In the lighter-than-air category, comprising 20 records, Poland leads with 7, followed by France with 5, and the U.S. and Germany with 4 each.

Of the 49 records credited to the United States, Benjamin King, the Washington sportsman pilot, leads in the number of records held by airmen individually. He is credited with 7 records, and shares one other with Daniel B. Brimm. Boris Sergievsky holds 5 records individually; shares 5 others with the two noted American pilots, Col. Charles A. Lindbergh and Edwin Musick, and one with Raymond B. Quick. Major General Frank M. Andrews, Chief of the GHQ Air Force, holds 3 records, as does the team of D.W. Tomlinson and J.S.Bartles.

Holding two official world's records are Howard Hughes; the team of Lieut. Commander Knefler McGinnis, Lieut.J.K. Averill, and Naval Aviation Pilot T.F. Wilkinson; the balloon team of Hill and Schlosser; and Miss Helen Richey. Those credited with one record each are the teams of Major Albert W. Stevens and Captain Orvil A. Anderson; Roscoe F. Turner and George E. Craig; Henry W. Borntraeger and Edward H. Stafford; Mr. and Mrs. Terris Moore; Captain A.Y. Smith, Lieuts. Hugh McCaffery and H.S. Hansell; Harry Richman and Georges Daufkerch; D.W. Tomlinson, H.B. Snead and F.R. Redpath; and individual pilots Arthur C. Chester; S.J. Wittman, Lieut. Apollo Soucek, U.S.N.; Lieut. Richard L. Burke, U.S.N.; Major Alexander P. de Seversky; the late Captain Hawthorne C. Gray; and, among the fair sex, the team of Miss Iona F. Coppedge and Mrs. J. Garrigus; the team of Miss Helen MacCloskey and Mrs. G.M. Savage; and (the last should be first) Mrs. Amelia Earhart Putnam.

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AERIAL GUNNERY BY 35TH PURSUIT SQUADRON

The 35th Pursuit Squadron, stationed at Langley Field, Va., moved into the field on July 15th at the National Guard Airport, Virginia Beach, Va., for the purpose of conducting aerial gunnery practice on tow targets. The program has called for three missions of one hour each to be flown daily. The firing to date has been very successful and effective. The personnel found the fine facilities of the nearby beachvery enjoyable for bathing and recreation.

AERIAL EXPERIENCE FOR WEST POINTERS

The Second Bombardment Group, commanded by Lieut. Colonel Charles B.Oldfield, recently returned from Mitchel Field, N.Y., to its home station, Langley Field, Va., after three weeks of intensive flying in conjunction with the aerial experience of the 1st Class from the United States Military Academy, West Point,N.Y.

The Group was scheduled to depart from Langley Field on June 13th, but due to zero ceiling on the Atlantic Coast they did not do so until the 15th. The formation, 27 ships strong, arrived at Mitchel Field late Monday afternoon and started work immediately. Missions were flown five days a week, beginning at 5:30 a.m., E.S.T. The 59th Service Squadron preceded the Group to Mitchel Field and established camp and arranged for housing and messing facilities. The men were quartered in a hangar and the officers in the gymnasium.

The Cadets were given aerial experience in navigation, gunnery and bombing. Three days of each week were utilized for bombing and aerial gunnery, the Group taking off and flying to Langley Field, where the bombing was done. The bombing was hampered because of continuous bad weather, but much valuable experience was gained in addition to demonstrating to the Cadets the methods of bombing. A total of 972 bombs was dropped by the Group.

The trip as a whole was very successful. Only one accident marred an otherwise perfect record, and it was not serious. Camp was broken on July 3rd, the ground echelon departing at 5:30 a.m. The air echelon departed at 2:00 p.m., and both echelons arrived at the home station without mishap. The ground echelon required two days for the return trip, camping one night enroute. The 4th of July traffic hampered the convoy somewhat but, due to experienced drivers, excellent time was made, and the convoy reached home ahead of schedule. As a whole, it was a most enjoyable and profitable exercise.

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37TH ATTACK MAKES THINGS MORE HOMELIKE

The lighter-than-air area assigned to the 37th Attack Squadron and Flight "A," 16th Observation Squadron, Langley Field, Va., has taken on a new appearance under the expert manicuring of the airplane mechanics. The mechanical ability of the grass cutters has lessened maintenance difficulties of the equipment, and more man hours per mower, sickle and scythe have been reported. In addition, the organization has assisted in beautifying the neglected areas that had taken on the appearance of Farmer Gray's pasture and again brought them into the fold of well cared for lawns.

WEST POINT GRADUATES ASSIGNED TO UNDERGO FLYING TRAINING

A total of 61 members of the class of 276 Cadets who graduated from the United States Military Academy on June 12, 1936, were, under recent orders of the War Department, directed to proceed upon the expiration of their graduation leave to Randolph Field, Texas, and report to the Commanding General, Air Corps Training Center, for duty and flying training.

These 61 students, or 22.1% of the entire graduating class of 276 students, received commissions in the various branches of the Army, except the Air Corps, as follows: Corps of Engineers, 4; Cavalry, 9; Signal Corps, 1; Coast Artillery, 4; Field Artillery, 13; Infantry, 30.

A year of intensive flying training is ahead of these West Point graduates to whom aviation presents a special appeal, i.e., an eight months' primary and basic course at the Primary Flying School at Randolph Field, and a four months' course at the Advanced Flying School at Kelly Field, Texas. Those who succeed in completing the year's course will be given the rating of "Airplane Pilot" and transferred to the Air Corps, while those failing to make the grade will return to the branch of the Army in which they were commissioned upon their graduation from the Military Academy.

It is now 15 years since the policy was inaugurated of assigning West Point graduates to the Air Corps flying schools for training. During the period from 1922 to 1935, inclusive, 848 West Pointers were accepted for flying training, of which number 373 graduated from the Advanced Flying School and approximately 28 are scheduled to graduate next October, a total of 401, or 47%. It would appear from this that slightly less than one-half of the young men mentally and physically qualified to undergo flying training at the Air Corps Training Center are able to pass through the course successfully.

The following statistics covering a 14-year period of flying training given to West Point graduates may be of interest:

Year	Total No. of Graduates	Assigned to the Air Corps	Pct.	Number graduating from the Advanced Flying School	Pct.
1922	102	16	15.6	8	50.00
1923	261	51	19.5	25	49.21
1924	406	61	15.0	20	32.78
1925	244	42	17.2	9	21.43
1926	152	18	11.8	7	38.88
1927	203	30	14.7	16	53.33
1928	260	77	29.0	53	68.83
1929	297	110	37.0	41	32.27
1930	235	84	35.7	40	47.62
1931	296	92	31.0	43	46.74
1932	258	68	26.3	38	55.88
1933	346	92	26.6	43	46.74
1934	247	60	24.3	30	50.00
1935	277	47	17.0	28*	59.57
Total	3584	848	23.6	401	47.28

* Scheduled to graduate in October, 1936.

The West Point graduates of the June, 1936, Class, who will soon report at Randolph Field to try their hand at piloting Army airplanes are enumerated below, as follows:

Class Standing.	Name	Home
	Corps of Engineers	
16	Dwight O. Monteith	Centerville, Iowa
18	Walter A. Faiks	Ada, Mich.
22	Thomas R. Conner	San Francisco, Calif.
30	Howard A. Morris	Lincoln, Neb.
	Cavalry	
10	Cecil E. Combs	Dallas, Texas
107	Albert P. Clark, Jr.	Fort Logan, Colo.
109	Eugene V. Reece	Holdenville, Okla.
111	Ned T. Norris	Grosse Pointe Village, Mich.
143	James W. Twaddell, Jr.	Andalusia, Pa.
144	William R. Grohs	St. Paul, Minn.
172	Harry R. Melton, Jr.	Brooklyn, N.Y.
173	John H. Daly	Pacific Grove, Calif.
194	William J. Hanlon	New Haven, Conn.
	Field Artillery	
47	James E. Goodwin	Gloucester, Mass.
50	Gordon H. Austin	Washington, D.C.
53	Jay D. Rutledge, Jr.	Red Lion, Pa.
64	Robert D. Gapen	Grand Marais, Minn.
78	Clinton D. Vincent	Natchez, Miss.
91	Seward W. Hulse, Jr.	Fort Mason, Calif.
92	Richard H. Carmichael	Austin, Texas
103	Carl K. Bowen, Jr.	Claremont, N.H.
117	Norman C. Spencer, Jr.	Concord, Mass.
119	Frederick R. Terrell	Tujunga, Calif.
121	Charles B. Tyler, Jr.	Fort Sill, Okla.
124	Frederick C. Rothwell, Jr.	Fitchburg, Mass.
128	Charles M. McCorkle	Newton, N.C.
	Coast Artillery	
71	Maxwell M. Kallman	New York, N.Y.
77	John K. Arnold, Jr.	Washington, D.C.
95	Frank W. Gillespie	Gaines, Mich.
122	Frederick Bell	Troy, Kans.
	Infantry	
88	William C. Hay	St. Paul, Minn.
96	James R. Gunn	Jacksonville, Fla.
114	John R. Kelly	Chicago, Ill.
129	Edward L.P. Burke	Helena, Mont.
150	John M. Bartella	Escanaba, Mich.
153	James T. Willis	Rome, Ga.
160	Clinton U. True	New Orleans, La.
161	Turner C. Rogers	Statesville, N.C.
168	George P. Champion	Marion, Ill.
171	Charles C. Segrist	Alexandria, La.
176	William F. Meany	Waltham, Mass.
197	William G. Lee, Jr.	Washington, D.C.
200	Laurence J. Ellert	Beechurst, L.I., N.Y.
210	Carl T. Goldenberg	Sweet Briar, Va.
211	Jackson H. Gray	Philipsburg, Pa.
218	Franklin R. Sibert	Hohokus, N.J.
219	James M. Illig	Erie, Pa.
224	Von Roy Shores, Jr.	Ardmore, Okla.
225	Wm. E. Covington, Jr.	Rockingham, N.C.
243	William M. McBee	Eureka Springs, Ark.
245	Clark L. Hosmer	Dunseith, N.D.
247	William W. Jones	Perry, Okla.
253	Joseph J. Nazzaro	Brooklyn, N.Y.
254	Charles M. Prosser, Jr.	St. Michael, Pa.
257	Benjamin F. Evans, Jr.	Wilkes-Barre, Pa.

Infantry, (Continued)

261	William L. Kimball	Denver, Colo.
264	Henry A. Mucci	Bridgeport, Conn.
269	Ernest S. Holmes, Jr.	Missoula, Mont.
270	Thomas R. Davis	New York, N.Y.
271	Wallace C. Barrett	Port Arthur, Texas

Signal Corps

274	Conrad F. Necrason	Cooperstown, N.Y.

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NEW A-17's FOR 37TH ATTACK SQUADRON

The 37th Attack Squadron is clearing their hangar space at Langley Field in anticipation of receiving the ten A-17 Attack planes, which allotment, however, has already been cut to eight. It is planned to groom these new planes as soon as possible for the Edgewood Arsenal maneuvers in September. No chemical missions can be flown in the near future, as the incoming ships are not completely equipped for the carrying of chemicals.

The A-8 airplanes have given excellent service and are improving every day. These Attack planes are the forerunners of the present Air Corps attack equipment and have ably accounted for themselves in all phases of Attack Aviation in conjunction with other branches of the service and within the Air Corps.

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FIRST BALLOON SQUADRON VISITS FORMER HOME

The First Balloon Squadron of Fort Sill, Oklahoma, in command of Major Ira R. Koenig, enroute to Allegan, Mich., to participate in the Second Army maneuvers, camped at Scott Field, Belleville, Ill., overnight on August 3rd, and departed the following morning.

This organization was made active May 17, 1929, at Scott Field. It was comprised of the entire personnel of the 12th Airship Company which had been made inactive May 16, 1929. On June 23, 1929, the newly formed First Balloon Company (subsequently redesignated Squadron) departed for its new station at Fort Sill.

The present personnel of the First Balloon Squadron includes a few members who were formerly stationed at Scott Field. Those few held a reunion with old friends in the Ninth Airship Squadron and Station Complement, (formerly the 24th Airship Service Squadron).

Major Koenig was previously stationed at Scott Field for several years.

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MAJOR de SEVERSKY VISITS SAN ANTONIO DEPOT

Major Alexander P. de Seversky, President of the Seversky Aircraft Corporation, Farmingdale, L.I., New York, flew to San Antonio on July 27th for a few days' visit at Randolph Field and the San Antonio Air Depot in connection with the new Seversky basic training planes, BT-8's, now being put into service at Randolph Field. He flew a new Pursuit type plane, making the journey from New York to San Antonio in very fast time, and particularly between Dallas and San Antonio. With him were two expert mechanics from his factory, Messrs. Willard Ryder and Erwin Hoenes, who will remain at the Depot about three months, assisting in an advisory capacity in maintenance matters pertaining to the new basic training planes.

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GHQ AIR FORCE COMMANDER VISITS HAMILTON FIELD

Major General Frank M. Andrews, the Commanding General of the GHQ Air Force, accompanied by Brigadier General Delos C. Emmons, Commanding General of the First Wing, GHQ Air Force, and Lieut. Colonel Maxwell, GHQ Air Force Ordnance Officer; Major Whitehead, GHQ Air Force Inspector, and Major Eglin, Assistant GHQ Air Force Inspector, arrived at Hamilton Field, Calif., on July 29th.

This was one of the many personal contact trips made by General Andrews for the purpose of discussing GHQ problems with the officers of the various units composing the GHQ Air Force.

On the following day, General Andrews met the officers of the 7th Bombardment Group in Group Headquarters and discussed the various problems and phases of work confronting the GHQ Air Force. General Andrews and his party left Hamilton Field shortly after noon, July 30th, for Fort Lewis, Wash.

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HAMILTON FIELD INSPECTED BY NEW WING COMMANDER

An inspection of Hamilton Field, Calif., by the new commander of the First Wing, GHQ Air Force, Brigadier General Delos C. Emmons, was held on Monday, July 27th. The activities were started with a review of the troops, followed by a general inspection of equipment, hangar area and quarters.

Upon the completion of his tour of inspection, an aerial review was flown for General Emmons and his staff. The 9th, 11th and 31st Bombardment Squadrons of the 7th Bombardment Group, passed by the reviewing stand in close formation.

The Wing Commander arrived at Hamilton Field on the afternoon of July 26th, flying in a B-10, piloted by Lieut. L.H. Watnee, from March Field, Calif. In the evening a reception was held in his honor at the Officers' Club, at which function the Hamilton Field officers and their wives were introduced by Lieut. Colonel C.L. Tinker, Commanding Officer of Hamilton Field.

General Emmons was accompanied by his staff, Majors E.S. Hoag, J.T. Curry, Jr., H.K. Ramey and Lieut. L.H. Watnee. Other March Field officers who were at Hamilton Field for the week end and for the inspection were Col. J.H. Pirie and Captain J.L. Davidson, of the 17th Attack Group; Lieut. Colonel H.C. Davidson, Majors Albert F. Hegenberger, W.S. Gravely and J.L. Grisham, of the 19th Bombardment Group, and Lieut. Colonel E.A. Lohman and Major Victor H. Strahm of the Station Complement.

Before leaving for March Field, the Wing Commander expressed himself as being very well pleased with the conditions existing at Hamilton Field.

AIR CORPS DETACHMENT AT OAKLAND AIRPORT

The Air Corps Detachment, U.S. Army, Municipal Airport, Oakland, Calif., came into existence upon the evacuation of Crissy Field, Presidio of San Francisco, Calif., by all Air Corps troops on June 30, 1936. This detachment consists of one Air Corps officer, Captain George E. Henry, and 15 enlisted men. Captain Henry is the Air Corps Unit Instructor, Second Reserve District, and Detachment Commander; Station Commander; Supply; Operations and all that goes with a station with one officer. The enlisted personnel is made up of former members of the 91st Observation Squadron, Air Corps, transferred to the 9th Corps Area Air Corps Detachment and assigned to this station when the 91st was pulled, roots and all, from its haven by the Golden Gate.

The flying equipment consists of five old but serviceable - at this writing - PT-3A airplanes and the related equipment that Crissy Field was able to spare and some they did not want.

The organization has hangar space in Hangar 1B, Oakland Airport, consisting of half of this hangar and lean-to space for offices, locker room, shops and supply room. A loft is used for the parachute section. The Port Authorities of Oakland have been very helpful in rearranging available space for the needs of the detachment, and after the usual shake-down it is expected that this unit will become settled to the extent that it will be able to find the PT's without falling over barrels, crates, boxes, metal, and a few spare wings, etc.

"Reserve activities are in full swing," says the News Letter Correspondent, "and in addition to getting set-up, so far we have been able to put all the Reserve officers in the air that can get out to fly during the seven days of the week. On August 1st, ten men of the detachment will go to duty with the Reserve summer camp at Moffett Field for four weeks. After the camp, it is expected that we will be able to get home in time for meals and have time to read the Air Corps News Letters.

Visiting plane facilities are limited due to lack of hangar space, and usually only one or two visitors can be accommodated. Since airplanes cannot be staked down on the flying field, when the hangar is full, other visitors will, of necessity, be referred to Moffett or Hamilton Fields.

The Reserve unit is proud of the activity shown by the Air Reserve pilots of this district, as a quick check of the Form 5's shows the total Reserve pilot time to be over 3140 hours for the past fiscal year. There were no mishaps involving injury to any of the personnel.

COMMENDATION FOR LIEUT. ARNO LUEHMAN

For "landing a Martin Bomber with three passengers in a small, unprepared space near Gila Bend, Arizona, with exceptional courage, good judgment and piloting skill, on June 10, 1936," Second Lieut. Arno H. Luehman, 32nd Bombardment Squadron, March Field, Calif., was commended, in a letter received from Major General Oscar Westover, Chief of the Air Corps. Added to the commendation from General Westover were complimentary indorsements from Major General Frank M. Andrews, Chief of the GHQ Air Force, Langley Field, Va.; Brigadier General Delos C. Emmons, Commander of the First Wing, with Headquarters at March Field, Calif.; Col. John H. Pirie, March Field Commander, and Lieut. Colonel Howard C. Davidson, commander of the 19th Bombardment Group.

While flying to El Paso from March Field on June 10th, the propeller of one motor on the Martin Bomber, which Lieut. Luehman was piloting, flew off into space while the other motor overheated. Warning his passengers to be prepared to jump, Lieut. Luehman carefully maneuvered the giant bomber to a landing on the desert and succeeded in preventing a fire breaking out.

While Lieut. Luehman hitch hiked for Gila Bend, the nearest town, his crew chief, Sergeant William Moberly, did the same to Casa Grande, Arizona. The remainder of the crew guarded the plane. Food and water were obtained from the two towns. The next day a new engine was flown from March Field.

Commenting further on this incident, General Westover stated that Lieut. Luehman's "action under the above circumstances was highly commendable, and his exemplary regard for the preservation of human life and government property was in accord with the best traditions of the service."

Lieut. Luehman, a recent bridegroom, is the son of Mrs. Edith Luehman, 3839 North 18th Street, Milwaukee, Wis., where he was born September 7, 1911. He graduated from West Point in 1934 and from the Air Corps flying schools at San Antonio in 1935.

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LIEUT. THATCHER JOINS CATERPILLAR CLUB

Student officer Herbert B. Thatcher, of the Advanced Flying School, Kelly Field, Texas, was flying an O-19 in formation on August 6th, and on coming out of a maneuver at about 4,000 feet his controls jammed. He could move them very slightly, and with the aid of his engine maintained his altitude, but after working on it about an hour he decided he did not have sufficient control to attempt a landing and jumped with his parachute, landing safely about 12 miles west of Kelly Field.

GUARD SYSTEM AT POPE FIELD
By the News Letter Correspondent

For almost two years, since its inception in September, 1934, Pope Field has had a guard system which is out of the ordinary. So successful has this system been that it is believed worthy of record in the Air Corps News Letter,

It is difficult to describe the Pope Field guard system without including the consolidated transportation department, the engineering department and the aircraft servicing department, for members of all are included to make up the force at Pope Field out of regular duty hours.

The Air Corps troops at Fort Bragg, N.C., consist of the Second Balloon Squadron and Flight C, 16th Observation Squadron, with a total for both organizations of 165 enlisted men. The areas to be guarded comprise the balloon hangar and the installations at Pope Field consisting of the hangars, transportation department, Air Corps supply, and gasoline storage systems. Since the balloon hangar and the airplane hangars are over one-half mile apart, it is apparent that a guard of two posts is required. The normal guard for the Air Corps area consists of the Officer of the Day, the Commander of the Guard (noncommissioned officer), two noncommissioned officers of the Guard, and six Privates. Now, here is wherein the guard system at Pope Field differs from the conventional. The Operations Office at Pope Field is the guard house. (Actually, members of the guard sleep in a small adjoining building. The prisoners, if any, and we hope not, are kept in the guard house at Fort Bragg).

The outstanding advantage of the system is that the Operations Office at Pope Field is open and doing business 24 hours per day, 365 days per year, with no additional personnel.

The Operations Office is the post of duty for the commander of the guard and one noncommissioned officer of the guard. The other noncommissioned officer of the guard is on duty in the balloon hangar. The force under the command of the commander of the guard consists of the entire guard plus the radio operator, one member of Flight C, detailed daily as emergency crew, one member of the aircraft servicing department, and an emergency driver who is detailed daily from the transportation department.

Other advantages of the guard system at Pope Field are:

a. It is a man saver. In particular, it is a saver of noncommissioned officers because the noncommissioned officers do the double duty of guard and of administering Pope Field out of regular duty hours. These noncommissioned officers supervise the servicing and repairing of transient aircraft, operate the night lighting system, send and receive all flight messages out of duty hours, supervise the transportation of all transients to and from Fort Bragg in the station wagon assigned to the guard, clear aircraft on the authorization of the Officer of the Day, issue flying equipment and maps, and take care of the wants in general of visiting aviators.

b. Instead of the usual motley array of mechanics in greasy dungarees, there is always available at Pope Field a small but dressy guard to meet visitors. During their tour of duty, the Pope Field guard is dressed in the service uniform.

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LARGE AMOUNT OF TRAINING AT KELLY FIELD

Using the oldest equipment in the Air Corps, the Air Corps Advanced Flying School, Kelly Field, Texas, accomplishes a maximum amount of air training with the minimum number of airplanes. The average number of airplanes at Kelly Field, counting those in and out of commission of all types, is 75. Three classes (4 months each), averaging 65 students per class, are trained each year, with each student receiving 140 hours. The average number of post officers, including instructors, on flying duty is 54. Each post officer during the last year averaged 350 flying hours.

On the above basis, 195 students are trained each year with each student averaging 140 hours! flying time, which gives a total of 27,300 hours for student training and 18,900 hours for post officers; total flying time for the post being approximately 46,200 hours. This gives an average of 616 hours' time per airplane for the year.

Each class of students is given the following training program:

Transition (practice on all types,	15 hours
Instrument Flying	18 "
Night Flying	
Local	3 "
Navigation	15 "
Day Navigation	28 "
Specialization in Attack, Bombardment, Pursuit or Observation	56 "
Miscellaneous	5 "

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Colonel Arnold N. Krogstad, the Commanding Officer of Kelly Field, returned on August 6th from the Office of the Chief of the Air Corps, Washington, D.C., where he had been attending a conference.

BIOGRAPHIES

COLONEL JACOB H. RUDOLPH

Colonel Jacob H. Rudolph, Air Corps, now on duty as Director of the Air Corps Board at Maxwell Field, Montgomery, Ala., was born at Milwaukee, Wis., March 25, 1886. After graduating from high school he attended St. Johns Military Academy. He was appointed from civil life as a second lieutenant, U.S. Army, September 25, 1908, and assigned to the 29th Infantry, receiving his promotion to 1st Lieutenant, July 1, 1916; to Captain, May 15, 1917; to Major, Signal Corps (temporary), August 5, 1917; to Major, Air Service, July 1, 1920; to Lieut. Colonel, Air Corps, August 1, 1933, and to Colonel, Air Corps (temporary), June 16, 1936.

Just prior to his transfer to the Aviation Section, Signal Corps, in August, 1917, Colonel Rudolph served with the 29th Infantry in the Panama Canal Zone. From 1913 to 1917 he was continuously on duty commanding machine gun troops. He reported for duty at Kelly Field, Texas, on October 5, 1917, and because of his experience with machine guns his service during the War was for the most part connected with aerial gunnery. At Kelly Field he commanded the Flying Cadet Detachment and was in charge of ground instruction from October, 1917, to March, 1918. From April to June, 1918, he was stationed at Taliaferro Field, Hicks, Texas, undergoing training in aerial gunnery under the British Royal Flying Corps, and serving as an instructor to officers and enlisted men in this phase of work.

From July to the end of December,1918, Colonel Rudolph was Officer in Charge of ground and aerial gunnery training at Carlstrom and Dorr Fields, Arcadia, Fla. From January 11 to April 24, 1919, he commanded Chapman Field, Miami, Fla. He then assumed command of Selfridge Field, Mt. Clemens, Mich. During August and September, 1919, he was on duty at Caldwell, N.J., in connection with the participation of Air Service personnel in the National Rifle Matches.

After commanding the Aviation Repair Depot at Speedway, Indianapolis, Ind., from January 17 to November 12, 1920, Colonel Rudolph was ordered to March Field, Riverside, Calif., for flying training, and upon the completion of the course of instruction in May,1921, he was transferred to Post Field, Fort Sill, Okla., for advanced training at the Observation School at that post. He received the rating of "Airplane Pilot" effective October 14, 1921.

On February 15, 1922, Colonel Rudolph was assigned to duty at Fairfield, Ohio, as Chief Engineer Officer. Other duties he performed were those of Information Officer, Officer in Charge of Flying, and as a member of several boards holding sessions at that post. On December 1, 1924, he assumed the duty of Chief of the Factory Section, Air Service Engineering Division, McCook Field, Dayton, Ohio; from November, 1925, to December, 1926, he was Chief of Fabrication Units, Chief of Maintenance Section and Chairman of Industrial Survey Board; and from January, 1927, to September, 1928, he was Chief of the Repair Branch and Chief of the Maintenance Section, McCook Field.

A student at the Air Corps Tactical School at Langley Field, Va., from September, 1928, to June, 1929, Colonel Rudolph, upon graduation, pursued a two-year course at the Command and General Staff School, Fort Leavenworth, Kansas. His graduation from Fort Leavenworth was followed by a three-year tour of duty in the Plans Division, Office of the Chief of the Air Corps, Washington, D.C. He was a student at the Army War College, Washington, from August, 1934, to June, 1935, and, following his graduation, was assigned to his present duty as Director of the Air Corps Board at Maxwell Field.

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LIEUT. COLONEL EARL L. NAIDEN

Lieut. Colonel Earl L. Naiden, Air Corps, now on duty as Commanding Officer of the 3rd Attack Group, Barksdale Field, Shreveport, La., was born at Woodward, Iowa, February 2, 1894. Graduating from the United States Military Academy, West Point, N.Y., June 12, 1915, and being commissioned a second lieutenant of Cavalry, he served with the 1st Cavalry at the Presidio of San Francisco, Calif., from September 12 to November 9, 1915; at the Presidio of Monterey, Calif., from November 13, 1915, to March 12, 1916; at Naco, Arizona, March 17th to April 30th, and at Douglas, Arizona, to June 12, 1916. He was then detailed to the Aviation Section, Signal Corps, as a student at the Signal Corps Aviation School at San Diego, Calif. Upon the completion of his flying training, he was rated a Junior Military Aviator as of April 8, 1917.

Joining the 1st Aero Squadron at Columbus, New Mexico, for duty as Transportation Officer, he participated in some of the Mexican Border patrols. He came to France with the 1st Aero Squadron in September, 1917, and shortly thereafter was sent to Italy to open an aviation school and receive instruction in flying the Caproni airplane. From October to December, 1917, he was head of the American Aviation Mission in Italy and received flying instruction in SVA and SP airplanes at Mirafiore, Italy. In December he received aerial gunnery training at Lugo di Bracciano, Italy.

During January and until February 22,

1918, Col. Naiden was on duty in the Aviation Office, Headquarters S.O.S., at Paris and then at Tours. He was then ordered to join a French Night Bombardment Group. During March and April he was on duty at the front with a French Night Bombardment Squadron. In May, 1918, he was on duty at the Day Bombardment School, 7th Aviation Instruction Center, A.E.F., in charge of students; in June, in charge of students at the 3rd Aviation Instruction Center, at the same time undergoing Pursuit training; in July and August on detached service in England studying organization and being in charge of flyers at a reception park and pool, and from August 20 to 30, he was on duty with the 96th Day Bombardment Squadron at the front.

Col. Naiden participated in the Somme Defensive, March 21, 1918; in the St. Mihiel Offensive, September 12, 1918, and in the Meuse-Argonne Offensive, September 26-November 1, 1918. In September, 1918, he was detailed as the Air Service representative with the General Staff, G-3, GHQ, American Expeditionary Forces. During his service overseas he flew Italian, French, English and German airplanes of all service types.

Returning to the United States in July, 1919, and after a brief period of duty in the Administrative Group, Office of the Director of Air Service, Washington, Col. Naiden, on September 1, 1919, reported to the Commandant of the General Service Schools, Fort Leavenworth, Kansas, for duty as instructor at the School of the Line. In April, 1921, he reported for duty at the Primary Flying School, Carlstrom Field, Arcadia, Fla., for frefresher flying instruction. He completed the required tests and was rated an Airplane Pilot, effective June 29, 1921. Resuming his duties as instructor, he became a student at this school for the 1922-23 course and, upon his graduation in July, 1923, he was assigned to duty at the Air Service Tactical School at Langley Field, Va., as Director of Instruction.

Additional duties assumed by Col. Naiden while at Langley Field were those of Instructor, Tactical School, from October, 1923; Assistant Commandant of the Tactical School from August 27, 1925, and Commanding Officer of the Tactical School Detachment from March 18, 1936. In addition, he served as a member of various boards.

Relieved from duty at Langley Field in July, 1926, he was a student at the Army War College for one year and, upon his graduation in June, 1927, was detailed as a student at the Ecole Superieure de Guerre, Paris, France, where he pursued a two-year course which terminated August 16, 1929.

For the next four years, Col. Naiden was on duty as Instructor at the Army War College, Washington, D.C. In August, 1933, he joined the 3rd Attack Group at Fort Crockett, Galveston, Texas, performing various duties, such as Post Executive, Operations Officer and Commanding Officer of the 13th Attack Squadron. He assumed the duty of Commanding Officer of the 3rd Attack Group, Barksdale Field, on February 27, 1935.

Colonel Naiden received his promotion to 1st Lieutenant, Cavalry, July 1, 1916; to Captain, Cavalry, July 4, 1917; to Major, Aviation Section. Signal Corps, same date; to Lieut.-Colonel, Air Service, April 30, 1919; honorably discharged from temporary rank, September 12, 1919; returned to rank of Captain, November 4, 1922; promoted to Major, September 25, 1924; promoted to Lieut.-Colonel, (temporary) June 16, 1936.

Col. Naiden has passed the 2700-hour mark in total flying time.

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BIOGRAPHY OF COL. MUHLENBERG-A CORRECTION

In the biography of Colonel H.C. Kress Muhlenberg, which appeared in the issue of the News Letter of August 1, 1936, there was omitted his service at the Command and General Staff Schools, Fort Leavenworth, Kansas, from September 1, 1923, to June 13, 1924, and his graduation from that School on June 13, 1924.

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CAPTAIN TALLEY AWARDED NICARAGUAN MEDAL

Wright Field, Dayton, Ohio, was the subject of reflected honor on August 4th, when Captain B.B. Talley, Corps of Engineers, stationed in the Aerial Mapping Unit, received the Medal of Merit awarded by the Nicaraguan Government in recognition of exceptionally meritorious services to the Republic during the earthquake of March 31, 1931.

At that time it so happened that Captain Talley was in charge of the Engineers' Battalion, Headquarters Company, which was making a survey of the Nicaraguan Canal. Three hours after the occurrence of the earthquake, which took approximately a thousand lives, Captain Talley and his company were ordered to Managua, the Capital, which was in flames. From Tuesday afternoon until Saturday morning they fought the flames and kept order in the destroyed city.

The Medal is of gold and bears the Nicaraguan Seal, the five volcanoes in the foreground surmounted by the Cap of Liberty resting on a spear over which is a rainbow. The award of the Medal was made in 1932, and its acceptance authorized by a special Act of Congress in May of this year.

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Contributions for the News Letter are solicited from France and Albrook Fields.

INTERESTING CAREER OF RETIRED NONCOMMISSIONED OFFICER

Technical Sergeant John H. Kendall, of the Station Complement, Scott Field, Belleville, Ill., was retired from the United States Army on the completion of thirty years' service on July 31st. Sergeant Kendall served 17 years in the Infantry and 13 in the Air Corps. Eleven of those 13 years were spent at Scott Field.

Sergeant Kendall originally enlisted in the 32nd U.S. Volunteer Infantry during the Spanish-American War, and he served more than a year with the regimental scouts in Northern Luzon, Philippine Islands. During that period he participated in one major battle and in many engagements and skirmishes.

On returning from Manila in 1901, he left the Army for civilian life. But in 1904, tired of the quiet life outside of the Army, he enlisted in the 6th Infantry at Fort Leavenworth, Kans. At the termination of that enlistment in 1904, he left the Army again to enter the newly born moving picture business. After a lapse of five years, Sergeant Kendall again returned to the colors, enlisting in the General Service Infantry at Jefferson Barracks, Mo. After two years there, and finding insufficient excitement, Sergeant Kendall went to the 27th Infantry for service on the Mexican Border during the trouble there in 1914 and 1915. In 1915, the 27th Infantry was ordered to the Philippines by way of the Panama Canal, which had been opened to shipping about that time. While the 27th's transport was enroute through the Canal, it was detained due to a rock slide in Culebra Cut.

A year after America entered the World War, the 27th Infantry was ordered to Siberia, where it served as a military police. Sergeant Kendall, then a First Sergeant, found the Siberian winter so cold that guards and patrols were able to remain on post for only 30-minute periods. He was glad when his organization was ordered to its new home in the tropical Hawaiian Islands in November, 1919.

But when the 27th disembarked from the transport at Honolulu, Sergeant Kendall continued on to the United States, where he served as First Sergeant in the 32nd Infantry at Camp Kearney, Calif.; the 19th Infantry at the Presidio of San Francisco, Calif.; the 27th Infantry at Honolulu, Hawaii, and as a Private in the 6th Infantry at Jefferson Barracks, Missouri.

In 1923, Sergeant Kendall transferred from the 6th Infantry to the 9th Airship Company, an Air Corps organization at Scott Field, Ill. Here, in a short time, he was promoted to Corporal and to Sergeant. He then transferred to the 21st Airship Group Headquarters, another Scott Field unit, where he was promoted to Staff Sergeant and, in 1933, to Technical Sergeant. In 1933, Sergeant Kendall was transferred to Albrook Field, Panama Canal Zone, for another two years of foreign service, returning to the Station Complement, Scott Field, in July, 1935.

In his thirty years of service, Sergeant Kendall has seen most of the United States and its possessions and, like most of the old timers, he hates to retire from active duty.

Sergeant Kendall has chosen the vicinity of Scott Field for his future home and has leased a residence in Belleville, where he and his wife are now living.

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WHOLESALE CATERPILLAR CLUB INITIATION

A Wright Field test flight which narrowly escaped ending in tragedy occurred on July 22nd, about 8:30 a.m., when a new Douglas Transport, carrying besides the two pilots five test observers, caught fire in the air. The pilots were Captains Frank Irvin and J.S. Griffith. Test observers in the cabin were John Cutting and H.D. McDaniels, of the Flying Branch; W.W. Cummings of the Equipment Branch, C.O. Hobson of Chanute Field, and John Weatherford of the Middletown, Pa., Air Depot, the two last named men being at the Division for the purpose of receiving instruction in instrument operation and testing.

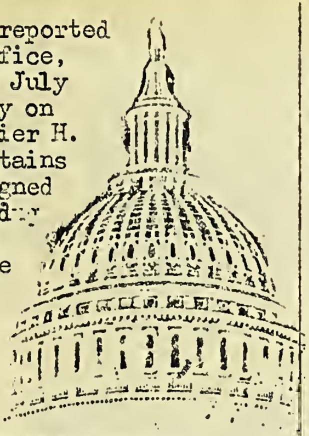
The plane had been flown at lower altitudes and was then climbed to about 5,000 feet when fire broke out in the left engine. Smoke and flame rolled back towards the cockpit. Simultaneously, the pilots reached to apply fire extinguishing apparatus and gave orders for those in the cockpit to jump. All five of the test observers bailed out promptly and landed without injury.

Cutting had been a member of the crew of the ill-fated Boeing Bomber which crashed and burned last year at Wright Field. He had been severely burned in that tragedy and, as it may be surmised, he did not hesitate in following orders.

In the meantime, the pilots saw that the fire extinguishers were taking effect and the fire was being checked, so they decided to endeavor to save the ship. This they succeeded in doing, flying back to Wright Field on one engine and making a safe landing. The excitement occurred over Dunreith, Indiana, a little town between Richmond and Indianapolis, approximately 45 miles from the Field. The test observers were returned to Wright Field by automobile. The emergency door was found not far from where they landed, and it was virtually undamaged. Luck was with the Air Corps that

(Continued on page 17)

WASHINGTON OFFICE NOTES



Three officers recently reported for duty in the Chief's Office, Captain Luther S. Smith on July 27th, Major Edward W. Raley on July 29th, and Captain Angier H. Foster on August 1st. Captains Smith and Foster were assigned to the Executive Office and to the War Plans and Training Division, respectively, the former coming from Kelly Field, Texas, and the latter from Barksdale Field, Shreveport, La. Major Raley, who was on duty at Mitchel Field, N.Y., was assigned to the Information Division.

Captain Morton H. McKinnon, who recently graduated from the Command and General Staff School, Fort Leavenworth, Kansas, and who went on leave of absence shortly after reporting for duty in the War Plans and Training Division on June 25th, returned on August 8th.

Returning from temporary duty at Wright Field were Major Ross G. Hoyt (Information Division) on July 27th, and Captain Robert V. Laughlin (Supply Division) on July 30th.

Officers returning from leaves of absence were Colonel Rush B. Lincoln, Chief of Personnel, on August 7th, and Lieut. Colonel Gerald E. Brower, War Plans and Training Division, on August 1st.

Colonel Frederick L. Martin, Executive, Materiel Division, Wright Field, Ohio, and Lieut. Colonel Arnold N. Krogstad, Commanding Officer of the Advanced Flying School, Kelly Field, Texas, who have been on temporary duty in the Chief's Office, returned to their respective stations on August 5th.

Colonel Chalmers G. Hall, Chief of the Supply Division, and Major Edward V. Harbeck, on duty in the Inspection Division, departed on leaves of absence on August 3rd.

Lieut. Colonel Harry H. Young departed on August 8th to attend the Second Army Maneuvers as Observer from the Chief's Office.

Major Karl S. Axtater made a cross-country flight to Selfridge Field and return.

Major Alvan C. Kincaid attended a conference recently at the Bell Aircraft Corporation at Buffalo, N.Y.

Captain Edward H. White was a visitor on July 30th during the course of a cross-country flight from Boston, Mass.

Major James A. Mollison and Captain Stewart W. Towle, of the Personnel Division, departed on August 10th and 11th, respectively, on plane-ferrying missions.

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NEW CHIEF OF INFORMATION DIVISION

Lieut. Colonel Harrison H.C. Richards, Air Corps, who has been on duty in the Information Division, Office of the Chief of the Air Corps, since last March, was assigned as Chief of that Division, effective July 15, 1936, relieving Colonel John D. Reardan, Air Corps. Prior to coming to Washington, Colonel Richards was on duty as Assistant Commandant of the Advanced Flying School, Kelly Field, Texas.

Colonel Reardan, who has been assigned as Air Corps Procurement Planning Representative in New York City, has for the past few weeks been taking a well earned rest, and is soon expected to tackle his new "job" with his customary vigor. Our best wishes go to him in his new work.

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Wholesale Caterpillar Club Initiation

(Continued from page 16)

day, if luck can ever be mentioned in the same breath as fire. Both pilots have been commended for the courage and good judgment they displayed in the face of danger.

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ATTACKERS DEPART FOR SECOND ARMY MANEUVERS

On August 1st, a flight of 16 Attack planes, of the A-17 type, left Barksdale Field, Shreveport, La., for Selfridge Field, Mt. Clemens, Mich., to participate in the maneuvers of the Second Army. The flight, commanded by Major Edward M. Morris, Air Corps, was scheduled to spend nine days in these maneuvers, dividing their time between Selfridge Field and Bowman Field, Louisville, Ky.

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PURCHASE OF NEW TYPE AIRPLANES

The Assistant Secretary of War, the Hon. Harry H. Woodring, recently announced that he had approved a contract with the Curtiss Aeroplane & Motor Company, Inc., of Buffalo, New York, for three high performance single-seater Pursuit airplanes of a new type, to be known as the T1P-36. The development is based on specifications laid down by the Air Corps, which has recently completed exhaustive tests on the experimental model at the Air Corps Materiel Division, Dayton, Ohio. The airplanes ordered on the new contract will be delivered to the Air Corps for service test.

The new type airplane is a low-wing monoplane of metal construction throughout, except for control surface covering. The main landing gear and tail wheel are completely retractable. The pilot's cockpit is entirely enclosed, and the fuselage in the vicinity of the cockpit is especially rugged to protect the pilot in case of a nose-over. Trailing edge wing flaps serve as air brakes in landing.

The new airplanes will be powered with 900 h.p. supercharged engines and will be equipped with automatically controlled propellers which maintain engine speeds at constant revolutions. Other new aeronautical engineering developments which cannot be described at this time are also to be incorporated in the airplanes.

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Major Edwin F. Carey (Captain) has been transferred from Chanute Field to Langley Field, and 2nd Lieut. William J. Holzapfel, Jr. from Kelly Field to Maxwell Field. Orders assigning Major Early E.W. Duncan, March Field, to Hqrs. 4th Corps Area, Atlanta, were revoked.

GENERAL DRUM ADDRESSES AIR CORPS OFFICERS

At the conclusion of his recent garrison and training inspection, Major General Hugh A. Drum, Commanding General of the Hawaiian Department, in a talk to the assembled officers of Luke Field, stated, in substance:

"I think anybody will realize that in an emergency, or war, those of us who work in the War Department know that there are always two salient things. The first thing, of course, is the aerial end, and the other which is most essential is to be able to function on the ground. I think you will agree with me that there is no use of having airplanes unless we are able to take care of them in the field; to take care of the personnel in the field; feed them, supply them, bring on spare parts, fix up emergency landing fields, and care for those fields, and all that goes with the personnel in the field; so, consequently, it is essential that the enlisted personnel, who are the main workers, get the picture of that field set-up, and one of my main purposes is to give them that picture to some extent.

Those of you who participated in the carrying of the air mail realize that we had some difficulty about the Air Corps going out into the field. They had not thought about that very much. Those officers who testified before the Baker Committee, of which I was a member, had only considered operating from their main stations, and there was, as you know, quite a lot of trouble out around Cheyenne and Chicago, so we want to be assured that the officers and men would be prepared to go out in the field in some emergency and take care of themselves.

The other picture I had in mind - or purpose - is to bring the enlisted men into a little more prominence; make him feel his part; bring up his morale by paying attention to his appearance and dress and his equipment, and make him realize that he is a main cog in a big wheel.

I think and I know that you have got my purpose, because what you have done today has demonstrated it, and I appreciate the efforts that have been made in these last few weeks to get ready. I know that you have profited a great deal by it. I can see that. * * *

As to the review of the morning and the citation ceremony and the parade: I want to congratulate all of you on it. I saw the command about eight months ago, and the improvement is remarkable. One thing this morning, the citation ceremony of the officers and men: Sometimes in our nonchalant way we get the impression or do not accord to the men their due for things done above the average, and I think it is one of the finest things we have done to bring some of these men out and congratulate them for having done especially good work. It is giving some of the other men an incentive to go on further with their jobs. * * *

The demonstrations: I enjoyed very much Major Liggett's group going by and its demonstration, and I am sure that there would have been a very effective result if they had been bombing or coming for attack.

As I went through the different engineers and operations offices and saw the care that had been taken, I was very happy to see it. It is proof of the effort made - all clean and well kept.

I looked over some of the charts of the flying done by the officers and I realized that there have been limitations, so that some of them have not completed the yearly total required, but there were physical conditions that could not be helped, and I am sure that many of you will complete the requirements before the end of the fiscal year.

The picture I got at the Depot* was one of those pictures that the best explanation I can give is about 100% improvement. I had gone through the Depot before on another visit about seven or eight months ago, and I think, Colonel Duncan,** it would be a fine thing for all the officers to go down and go through the Depot. Get Colonel Branshaw and Captain Kane to take them through, because something like that may be their responsibility. It shows what can be done with places like engineering shops and other messy places - how they can be kept up. That was a very fine demonstration of what two officers can do.

The camp this afternoon was one of the best I have seen, not only as to the completeness of the equipment, but with the care taken. The putting out of telephones, the communication between the ground and the air was all working, and I am very much satisfied with it. I am sure that when the maneuvers come off in the middle of next month that you will carry out some of your field equipment and be able to take care of yourselves.

In closing, I would like to say, Colonel Duncan, that I realize what the officers have been doing, and I want them to know I am thoroughly satisfied with the results."

*Hawaiian Air Depot, Luke Field.

** Lieut. Colonel Asa N. Duncan, Commanding Officer of Luke Field.

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WRIGHT FIELD OFFICERS ON INSPECTION TRIP

Brigadier-General A.W. Robins, Chief of the Materiel Division, Wright Field, Dayton, Ohio, with six other officers of that Division, took off in a Douglas Transport plane on August 3rd for an inspection trip of aircraft manufacturing plants and government aircraft activities in Buffalo, New York; Williamsport, Pa.; Hartford, Conn.; Mitchel Field, N.Y., Baltimore, Md., and Middletown Air Depot, Pa. They remained away approximately one week. Those accompanying General Robins were Lieut. Colonel Oliver P. Echols, Majors Edwin R. Page, Rudolph W. Probst, Hugh A. Bivins, Captain Frank G. Irvin and Lieut. Paul E. Shanahan.

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A radio station has been installed in the 88th Observation (LR) Squadron, Hamilton Field, which stays in direct contact with airplanes while on navigation missions. This prevents interfering with the Group Station, which was necessary at the beginning of the navigation instruction given at Hamilton Field. Three amphibians are being used for navigation training.

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VOL. XIX **Air Corps News Letter** NO. 17

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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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KNOCK-TESTING OF FUELS

By Captain F. D. Klein, Air Corps,
Materiel Division, Wright Field

ANTI-KNOCK value is probably the most important single property of aircraft engine fuel, since it directly limits the allowable engine output. Anti-knock value is normally expressed in terms of "Octane Number." The Octane Number of a fuel is the percentage of iso-octane in a mixture of iso-octane and normal heptane, which mixture has exactly the same anti-knock properties as the fuel in question. Iso-octane possesses unusually good anti-knock properties, whereas normal heptane is one of the worst knocking fuels. Therefore, the higher the Octane Number of a fuel the better is its anti-knock value and the more closely it approaches iso-octane in this respect. The Air Corps now specifies fuel of a minimum anti-knock value of 65 Octane for training type engines, and 92 Octane for tactical type engines, and in addition is procuring 100 Octane fuel at the present time for use at Barksdale, Hamilton and Selfridge Fields.

In accordance with the above definition of anti-knock values, 100 Octane fuel is equal in knocking properties to pure iso-octane. Although it now contains about 45 per cent of commercial iso-octane, it can be produced without the use of any iso-octane.

In conducting knock tests, a small single-cylinder engine designed specifically for fuel testing is used. All engine conditions, such as speed, jacket temperature, air-fuel ratio, etc., are carefully maintained constant at their specified values. To determine whether a sample of fuel conforms with Air Corps requirements for 92 Octane fuel, the engine is first operated at a standardized degree of knock with a reference fuel known to be exactly equal in anti-knock properties to a mixture of 92 per cent iso-octane and 8 percent normal heptane, octane and heptane themselves not being used for routine tests since they each cost $18.00 per gallon in their pure state.

The degree of knock is indicated by a potentiometer, which shows the temperature of a thermocouple inserted into the combustion chamber, this temperature rising with increased intensity of knock. After operating the engine with this reference fuel for several minutes, until conditions become stabilized, the fuel to the carburetor is shut off and the fuel in question, which has been placed in a second chamber, is quickly turned on. Without changing any other conditions, the engine is then operated for several more minutes, until conditions again become stabilized, and the reading of the potentiometer is recorded. If the fuel in question is better than the 92 Octane reference fuel, the potentiometer will indicate a lower temperature, since the knock intensity will be lower. Conversely, if the fuel in question is poorer than the reference fuel, the potentiometer will indicate a higher temperature and the fuel will be rejected.

By a similar process of comparing fuels in the engine, it is possible to determine the exact Octane Number of any fuel, or to find the amount of tetraethyl lead required to give any desired Octane Number.

The Materiel Division conducts knock tests of fuels submitted periodically by all stations to insure that the specified quality is being maintained. It also conducts tests of fuels submitted by some of the contractors to determine the amount of tetraethyl lead required to make the fuel conform with Air Corps anti-knock standards. Other samples are tested from time to time, in cooperation with other laboratories, to determine how closely the knock ratings can be reproduced in the various laboratories throughout the country.

In addition to these routine tests of fuels, the Division is continuously conducting experimental tests for the development of better fuels and improved methods of knock test. A large part of this work is closely coordinated with the Navy Department, National Advisory Committee for Aeronautics, Bureau of Standards, and commercial organizations, in order to make as rapid progress as possible.

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Lt. Col. George H. Brett, A.C., was appointed a wing commander in the Air Corps with the temporary rank of Brigadier General from August 20, 1936, under Act of Congress of June 16, 1936.

IMPROVED TRAINING METHODS IN HAWAII

The 5th Composite Group at Luke Field, T.H., begins the new training year with prospects for greatly increased opportunities for broader training activities than at any time heretofore. This is made possible by the completion of a landing mat and the installation of a modern field lighting system. In addition, the Group finds itself in the process of being equipped with modern aircraft. In the past, not having airplanes of a type which can maintain altitude on one motor, inter-island and cross-water flying has been rigidly curtailed for the sake of safety. Since the new Bombers can not only maintain altitude but can climb on one engine, prospects for training missions which will include flights to the outlying islands are greatly improved.

Graduates of the local navigation schools, in particular, are looking forward to opportunities to practice their art by flights to the other islands and interception problems involving approaching vessels. Plans for high altitude bombing practice have made necessary the abandonment of the old Ahua Point range, and the range, equipped with observation towers, will shortly be in operation at Waimanalo.

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"WEATHER HOPS" BY SCOTT FIELD PILOTS

During the two years, July 1, 1934, to June 30, 1936, Scott Field officers and enlisted pilots made a total of 588 "weather hops" for the Weather Bureau, U.S. Department of Agriculture. During the first year period, 302 flights were made, with 63 missed; and during the second year 286 flights were made and 80 missed. The average percentage for flights made during the two years is 80.

Four different airplanes were used of the O-19 and BT-2 types. One plane was lost when Captain Raphael Baez ran out of fuel in a fog and was forced to "bail out" near Peoria, Ill. There was one forced landing away from Scott Field, because of fog, but the plane was safely returned the next day.

Although the average altitude of the flights was 18,000 feet above sea level, two flights, one by Private Arnold T. Johnson and the other by 2nd Lieut. Paul H. Meng, were made above the 21,000 foot level. Scott Field's altitude is 444 feet above sea level.

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WAR OPERATIONS AT POST FIELD

At this writing Post Field, Fort Sill, Okla., is invaded by the Division Air Service of the Colorado National Guard. War-torn Fort Sill, the scene of countless simulated battles, reacts again in the throes of this latest conflict. The activity is manifest to a marked degree from dawn until noon, when silence prevails, almost instantly, until another dawn.

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THE P-6A IS NO MORE

"As far as we know," says the News Letter Correspondent from the Fairfield, Ohio, Air Depot, "the last P-6A finished its career when it landed wrong side up in a small field at Fernandina, Florida. Private T.S. Davis, piloting the relic, was enroute to Jacksonville, Florida, when forced to land about twenty miles north of his destination. Although not as well known as some of the older types, it had its merits, although its passing does not cause many regrets. However, it had one thing in its favor - it was warm in the winter."

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TIMING DEVICE ON SPEED COURSE

The News Letter Correspondent from the Fairfield Air Depot, Patterson Field, Ohio, states that it is contemplated installing an electrical timing device on the Speed Course located on the westerly side of the flying field. When completed, small towers, approximately 50 feet high, will be located at each end of the course. Notice to Pilots will be issued when the project is further advanced.

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HAWAIIAN AIRMEN AT KILAUEA MILITARY CAMP

Following the rigorous campaign conducted during the recent Hawaiian Department Maneuvers, in which the 5th Composite Group, Luke Field, at various times took the part of the enemy as well as the defending air forces, a group of fourteen war-weary pilots, including Lieut. Col. Asa N. Duncan, took off on July 9th for 14 days' detached service at the Kilauea Military Camp, on the "Big Island." The officers and men going to camp traveled by air. Wives, sweethearts and others were not so fortunate and were compelled to undertake the voyage on the "General Royal T. Frank." Reports from the camp depict the horrors of a terrible voyage with mountainous seas. A number of the ladies, unwilling or unable to face the hardships of a return voyage by water, have reserved space on the Inter-Island Airways planes.

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Flight A, 1st Transport Squadron, Patterson Field, Fairfield, Ohio, was quite busy freighting during the month of July. In a total of 17 freight trips, 12,655 miles were flown, and the total amount of freight carried aggregated 42,377 pounds.

NEW CRASH TRUCK AT SCOTT FIELD

A new "crash type 100" fire truck recently received at Scott Field, Belleville, Ill., will shortly be placed into service. It was designed especially for extinguishing liquid (gasoline and oil) and electrical fires. The new truck will be especially useful at an aircraft crash or other emergency which may occur at a distance from a water supply, as it has a 500-gallon water tank.

This 2½-ton fire truck is equipped with American-La France equipment and has ten wheels to afford more certain traction on muddy fields. It is known as a triple combination apparatus, the name being derived from the fact that it has three separate hose lines which can be used singly or all at the same time. Each hose is coiled on a reel and is connected at its base end to its particular fire-fighting agent. The three agents used with these hose are water, carbon dioxide and foamite.

The truck is especially useful for extinguishing fires which are at a distance from a water supply. The water storage tank of 500-gallon capacity is unusually large. If water is pumped from it at the maximum rate of 135 gallons a minute with force enough to throw the stream 70 feet, the supply will last almost four minutes. But four minutes is usually time enough to get a minor fire under control and to give the other fire apparatus time to make the necessary preparations.

Water is not sufficiently effective for liquid and electrical fires. Therefore the truck is equipped with other extinguishing agents to take care of any kind of fire. For a liquid fire of burning oil or gasoline, foamite is particularly effective. The truck carries 550 pounds of fine, gray foamite powder sealed in large cans. A foamite generator is mounted on the side of the truck. The generator receives water directly from the water pump, allowing the water to suck foamite powder into it as it rushes through the generator and out through the hose. Foamite put on a fire quickly forms a "soap sud" kind of coating that floats on the burning liquid and smothers the flames by excluding the oxygen in the air. A 2½-inch hose, 150 feet in length, is used only with foamite.

For fighting large electrical fires, carbon dioxide in liquid form is used. This chemical is stored in four 50-pound tanks under high pressure. These tanks are connected, two in a series, to a valve with one-inch hose attached. When the first two tanks are exhausted, the other two can be turned on for immediate use. Liquid carbon dioxide put on a fire causes a blanket of CO_2 to be formed; and oxidation, which we call "fire" to cease. Thus the fire is smothered out.

Another agent for extinguishing fire is carbon tetrachloride, available in portable hand extinguishers. This chemical is especially useful for small liquid and electrical fires. It generates carbon monoxide gas which smothers the flames.

The fire truck also has three other portable hand extinguishers, one foamite and two carbon dioxide, for use on small blazes.

Scott Field has other fire-fighting equipment, including three more fire engines, three hand-drawn chemical carts and five hand-drawn carts. The chemical and the hose carts are stationed at advantageous points on the field as auxiliary units. There is also a large number of hand extinguishers located in the various buildings.

The new "crash" truck will be stationed near the airplane hangars while flying operations are being carried on, according to the Air Corps safety requirement.

Scott Field sometimes has fires, but due to the efficiency of the fire department and the alertness of the guard and the military personnel in general, these few fires have been extinguished immediately after their start.

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ARTILLERY OFFICERS DROP BOMBS

The 23rd Bombardment Squadron, Luke Field, T.H., has been conducting a course for contact officers from the Coast Artillery Corps. The Artillerymen have been given considerable air work and were fortunate enough to find places in the formation which recently flew to Hilo and return. They have been getting the bomber's viewpoint by dropping bombs and firing aerial machine guns. When the course is completed they will have had an average of ten hours in the air.

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SERGEANT JOHANNSEN BACK AT SCOTT FIELD

Master Sergeant Walter Johannsen, who recently transferred back to Scott Field, from Kelly Field, Texas, has been placed in charge of the lighter-than-air gas plant. Sergeant Johannsen entered the lighter-than-air branch of the Aviation Section, Signal Corps, at Fort Omaha, Nebraska, in 1917, and served throughout the war at the front with the 4th Balloon Company. He was stationed at Scott Field for six years from 1922 until 1928. Once more a member of the Ninth Airship Squadron, he will fill the vacancy created by the retirement of Master Sergeant Herbert J. Bertram on June 30th.

REORGANIZATION OF THE ARMY AIR CORPS

On August 12, 1936, the War Department issued instructions governing the reorganization of the Army Air Corps within the continental limits of the United States incident to the reorganization of the General Headquarters Air Force.

Air Corps activities listed under the jurisdiction of the Chief of the Air Corps are as follows:

1. Office, Chief of the Air Corps, Washington, D.C.
2. Materiel Division, Wright Field, Ohio.
   - Flight B, 1st Transport Squadron, Wright Field.
   - Fairfield Air Depot, Patterson Field, O.
     - 1st Transport Squadron, less Flight B, Patterson Field, O.
   - Middletown Air Depot, Olmstead Field, Pa.
     - 2d Transport Sq., Olmstead Field, Pa.
   - San Antonio Air Depot, Duncan Field, Tex.
     - 3d Transport Sq., Duncan Field, Texas.
   - Rockwell Air Depot, Rockwell Field, Calif.
     - 4th Transport Sq. " " "
   - Scott Field Air Depot, Scott Field, Ill.
   - Air Corps Engineering School, Wright Field, Ohio.
3. Air Corps Technical School; Hq. and Hq. Sq., Technical School; 10th Air Base Sq.; 1st School Sq., and 2nd School Sq., Chanute Field, Ill.
4. Air Corps Training Center; Headquarters; Hq. and Hq. Sq., Primary Flying School; 11th Air Base Sq.; 46th, 47th, 52nd and 53rd School Squadrons; 20th Photo Section, Randolph Field, Texas.
   - Hq. and Hq. Sq., Advanced Flying Sch.; 12th Air Base Sq.; 61st, 62nd, 63rd and 64th School Squadrons, and 22nd Photo Section, Kelly Field, Texas.
5. Air Corps Tactical School; Hq. and Hq.Sq., Tactical School; 13th Air Base Sq.; 91st School Sq.; Air Corps Board, 4th Photo Section, Maxwell Field, Ala.
6. Bolling Field; Base Hq. and 14th Air Base Sq.; 1st Staff Sq., and 2nd Staff Sq., District of Columbia.

Activities under General Headquarters Air Force:

Headquarters and Headquarters Squadron, Langley Field, Va.

1st Wing: Hq. and Hq. Sq., 1st Wing; Base Hq. and 4th Air Base Sq., March Field, Calif.
- 17th Attack Group, Hq. and Hq. Sq.; 34th, 73rd and 95th Attack Sq., March Field.
- 19th Bombardment Group, Hq. and Hq. Sq.; 30th and 32d Bomb. Sq., March Field.
- 23rd Photo Sec.; 38th Reconnaissance Sq.; Cadet Detachment, March Field, Calif.
- Base Hq. and 5th Air Base Sq., Hamilton Field, Calif.
- 7th Bombardment Group; Hq. and Hq. Sq.; 9th, 11th and 31st Bomb. Sq., Hamilton Field.
- 88th Reconnaissance Sq.; Cadet Detachment, Hamilton Field, Calif.

2nd Wing: Hq. and Hq. Sq., 2nd Wing; Base Hq. and 1st Air Base Sq., Langley Field, Va.
- 2nd Bombardment Group; Hq. and Hq. Sq., 20th, 49th and 96th Bomb. Sq., Langley Field, Va.
- 8th Pursuit Group; Hq. and Hq. Sq.; 33rd, 35th and 36th Pursuit Sq., Langley Field.
- 37th Attack Sq.; 2d Photo Sec., 21st Reconnaissance Sq., Cadet Detachment, Langley Field, Va.
- Flt. A - 16th Obs. Sq. (C & A) (III CA) (See Note).
- Base Hq. and 2d Air Base Sq., Mitchel Field, New York.
- 9th Bombardment Group, Hq. and Hq. Sq.; 1st, 5th and 99 Bomb. Sq., Mitchel Field, N.Y.
- 8th Photo Section; 18th Reconnaissance Sq.; Cadet Detachment, Mitchel Field, N.Y.
- 14th Photo Section (II CA) (See Note); 97th Observation Sq. (II CA) (See Note); Mitchel Field, New York.
- Base Hq. and 3d Air Base Sq., Selfridge Field, Mich.
- 1st Pursuit Group, 17th, 27th and 94th Pursuit Sq., Selfridge Field, Mich.
- Cadet Detachment, Selfridge Field, Mich.

3rd Wing:
- Hq. and Hq. Sq., 3d Wing, Barksdale Field, La.
- Base Sq. & 6th Air Base Sq., " " "
- 3rd Attack Group, Hq. and Hq. Sq., 8th, 13th and 90th Attack Sq., Barksdale Field, La.
- 20th Pursuit Group, Hq. and Hq. Sq.; 55th, 77th and 79th Pursuit Sq., Barksdale Field.
- 5th Photo Section; Cadet Detachment, Barksdale Field, La.

Note: The following units located at stations under the command of the Commanding General, GHQ Air Force, will be under the control of the respective Corps Area Commanders for the purpose of tactical training and employment:

Commanding General, 2nd Corps Area:
- 97th Observation Sq., Mitchel Field, N.Y.
- 14th Photo Section, Mitchel Field, N.Y.

Commanding General, 3rd Corps Area:
- Flight A, 16th Observation Sq. (C & A) Langley Field, Va.

Air Corps Units Assigned to Corps Areas

Base Hq. and 7th Air Base Sq., 15th Observation Sq., 21st Photo Sec., Hq. 21st Airship Group, 9th Airship Sq., Scott Field, Ill.

Base Hq. & 8th Air Base Sq.; 12th Observation Group, Hq. and Hq. Sq., 12th and 22nd Obs. Sq.; 1st Photo Section, Brooks Field, Texas.

Base Hq. and 9th Air Base Sq.; 19th Airship Squadron, Moffett Field, Calif.

91st Obs. Sq. (Corps and Army); 15th Photo Section, Fort Lewis, Wash.

Flight C, 16th Obs. Sq. (Corps and Army); 2nd Balloon Squadron, Fort Bragg, N.C.

1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th and 9th Corps Area Air Corps Detachments.

Air Corps Units assigned to War Department activities other than the Air Corps are:
- U.S.M.A., Air Corps Detachment.
- Fort Leavenworth Air Corps Detachment.
- Edgewood Arsenal Air Corps Detachment.
- Aberdeen Proving Ground Air Corps Detachment.
- Flt. B, 16th Obs. Sq., Fort Benning, Ga.
- Flt. D, 16th Obs. Sq., Fort Riley, Kansas.
- Flt. E, 16th Obs. Sq. Fort Sill, Oklahoma.
- 1st Balloon Squadron, Fort Sill, Oklahoma.

The Air Corps units and headquarters listed in the tables below will be reorganized and redesignated or constituted, effective September 1, 1936.

Table I

Units and Hqrs. reorganized and redesignated

Present Designation or Designations	New Designation
Langley Field, Va.	
Hq. 2d Wing	Hq. & Hq. Sq., 2d Wing
Hq., 2d Bomb. Group 59th Serv. Sq.	Hq. and Hq. Sq., 2nd Bomb. Group
Hq. 8th Pur. Group 58th Serv. Sq.	Hq. and Hq. Sq. 8th Pursuit Group
21st Obs. Sq. L.R. Amphibian	21st Recon. Sq.
21st Obs. Sq. now active at Bolling Field made an active Recon. Sq. at Langley Field. No personnel to be transferred.	
Mitchel Field, New York	
Hq. 9th Bomb. Group 61st Serv. Sq.	Hq. and Hq. Sq., 9th Bomb. Group
18th Obs. Sq. LR Amph	18th Recon. Sq.
Redesignated a Recon Sq. and made active	
Selfridge Field, Michigan	
Hq. 1st Pursuit Group 56th Serv. Sq. 57th Serv. Sq.	Hq. and Hq. Sq., 1st Pursuit Group
Hamilton Field, California	
Hq. 7th Bomb. Group 69th Serv. Sq. 70th Serv. Sq.	Hq. and Hq. Sq., 7th Bomb. Group
88th Obs. Sq.LR Amph	88th Recon. Sq.
March Field, California	
Hq. 1st Wing	Hq. & Hq.Sq. 1st Wing
Hq. 17th Attack Gp. 64th Serv. Sq.	Hq. and Hq. Sq., 17th Attack Group
Hq. 19th Bomb. Gp. 76th Serv. Sq.	Hq. & Hq. Sq., 19th Bomb Gp.
38th Obs.Sq. LRLB	38th Recon. Sq.
Redesignated 38th Recon. Sq. and made active	
Barksdale Field, Louisiana	
Hq. 3d Wing	Hq. and Hq. Sq.,3d Wing
Hq. 3d Attack Gp. 60th Serv. Sq.	Hq. and Hq. Sq. 3d Attack Group
Hq. 20th Pur. Gp. 71st Serv. Sq.	Hq. and Hq. Sq. 20th Pursuit Group
Brooks Field, Texas	
Hq. 12th Obs. Gp. 62nd Serv. Sq.	Hq. & Hq. Sq., 12th Obs. Group
Chanute Field, Ill.	
98th Serv. Sq.	10th Air Base Sq.
Randolph Field, Texas	
67th Serv. Sq.	11th Air Base Sq.
Kelly Field, Texas	
81st Serv. Sq.	12th Air Base Sq.
Maxwell Field, Alabama	
AC Tac.Sch. Det.* AC Personnel only 84th Serv. Sq.	Hq. and Hq. Sq. A.C. Tactical School,13th Air Base Sq.
Bolling Field, D.C.	
100th Serv. Sq.	Base Hq. & 14th Air Base Squadron
Fort Lewis Air Corps Detachment	To be absorbed by the 91st Obs. Squadron.

*Discontinued

Table II - Constituted Units

The units designated below have been constituted from the Station Complement at the posts indicated, the Station Complement being discontinued:

Base Hq. & 1st Air Base Sq. (2nd Group) Langley
Base Hq. & 2d Air Base Sq., Mitchel Field, N.Y.
Base Hq. & 3d Air Base Sq., Selfridge Field,Mich.
Base Hq. & 5th Air Base Sq.,Hamilton Fld.,Calif.
Base Hq. & 4th Air Base Sq., March Field,Calif.
Base Hq. & 6th Air Base Sq.(3 Gp.)Barksdale Fld
Base Hq. & 7th Air Base Sq., Scott Field, Ill.
Base Hq. & 8th Air Base Sq., Brooks Field,Texas
Base Hq. & 9th Air Base Sq., Moffett Dield,Calif.

The units indicated below have been constituted from the activities noted:

Designation	Activity from which constituted
Chanute Field, Illinois	
Hq. & Hq. Sq. AC Tech School	A.C. Tech. Sch. Det. (Part)
1st School Squadron	Personnel at Chanute Fld.
2nd School Squadron	Personnel at Chanute Fld.
Randolph Field, Texas	
Hq. & Hq. Sq. AC Primary Flying School	A.C. Primary Flying Sch. Detachment (Part)
Kelly Field, Texas	
Hq. & Hq. Sq. A.C. Advanced Flying School	A.C. Adv. Flying School Det.(Part) 68th Serv.Sq.
61st School Squadron	Personnel at Kelly Field
62nd School Squadron	Personnel at Kelly Field
63rd School Squadron	Personnel at Kelly Field
64th School Squadron	Personnel at Kelly Field
Bolling Field, D.C.	
1st Staff Squadron	Personnel at Bolling Fld.
2nd Staff Squadron	Personnel at Bolling Fld.
Maxwell Field, Ala.	
91st School Squadron	Personnel at Maxwell Fld.

The Air Corps units and headquarters listed below retain the same designation as now authorized:

Table III

Langley Field, Va.:
Hq. and Hq. Sq. GHQ AF; 20th, 49th, 96th Bombardment Squadrons; 33rd, 35th, 36th Pursuit and 37th Attack Squadrons; 2nd Photo Section; Flt. A - 16th Obs. Sq. (C & A).

Mitchel Field, New York:
1st, 5th and 99th Bombardment Squadrons, 8th and 14th Photo Sections, 97th Observation Squadron.

Selfridge Field, Mich.:
17th, 27th and 94th Pursuit Squadrons.

Hamilton Field, Calif.:
9th, 11th and 31st Bombardment Squadrons.

March Field, Calif.:
34th, 73rd, 95th Attack Squadrons, 30th and 32nd Bombardment Sqdns., 23rd Photo Section.

Barksdale Field, La.:
8th, 13th and 90th Attack Squadrons; 55th, 77th and 79th Pursuit Squadrons, 5th Photo Sec.

Scott Field, Ill.:
15th Observation Squadron (C & A), 21st Photo Section, Hq. 21st Airship Group*, 9th Airship Squadron*, Scott Field Air Depot**.

*Removed from GHQ AF and placed under control of C.G., VI C.A.

**To function under control of Chief of the Air Corps.

Brooks Field, Texas:
12th and 22nd Obs. Sq. (C & A), 1st Photo Section.

Moffett Field, Calif.:
19th Airship Squadron.

Randolph Field, Texas:
Hq. A.C. Training Center, 46th, 47th, 52nd, 53rd School Squadrons, 20th Photo Section.

Maxwell Field, Alabama:
4th Photo Section; Air Corps Board.

Kelly Field, Texas:
22nd Photo Section.

Fort Lewis, Washington:
91st Observation Squadron.

Fort Sill, Oklahoma:
1st Balloon Squadron.

Fort Bragg, N.C.
2nd Balloon Squadron.

Air Corps Detachments - 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th and 9th Corps Areas.
Fort Leavenworth Air Corps Detachment
U.S.M.A. Air Corps Detachment.
Edgewood Arsenal Air Corps Detachment
Aberdeen Proving Ground Air Corps Detachment
Flt. B, 16th Obs. Sq., Fort Benning, Ga.
Flt. C, 16th Obs. Sq., Fort Bragg, N.C.
Flt. D, 16th Obs. Sq., Fort Riley, Kansas.
Flt. E, 16th Obs. Sq., Fort Sill, Oklahoma.

The Air Corps units listed below are rendered inactive and assigned as indicated:

Table IV.

Chanute Field, Ill.
48th Pursuit Squadron assigned to GHQ AF

Kelly Field, Texas:
41st Obs. Sq. LR Amph., redesignated 41st Recon. Sq., rendered inactive and assigned to GHQ AF.
39th Obs. Sq. (C & A) assigned to C.G., 8th Corps Area.
42nd Bomb., 40th Attack and 43rd Pursuit Squadrons assigned to GHQ Air Force.

Maxwell Field, Alabama:
86th Obs. Sq. (C & A) assigned to C.G., 4th Corps Area.
51st Attack, 87th Pursuit and 54th Bombardment Squadrons assigned to GHQ Air Force.

Bolling Field, D.C.:
14th Bomb. Sq., assigned to GHQ Air Force.

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During the month of July, the Engineering Department of the San Antonio Air Depot overhauled a total of 20 airplanes and 73 3ngines, and repaired 35 airplanes and 47 engines.

MORE IMPROVEMENTS AT BOLLING FIELD

On August 28th the Post Exchange was scheduled to dedicate to the service of Army personnel at Bolling Field, D.C., a new and modern gas station. It is conveniently located near the new Post Exchange, and its construction and facilities indicate another step toward the completion of the New Bolling Field. It has indoor facilities for washing and greasing cars, including a hydraulic rack, and plenty of space for tires and other accessories. A railroad siding will bring carloads of gasoline to within a few feet of the large underground tanks and do away with the old method of bringing in gas and oil by truck.

The elevation of the new field also overcomes the danger of flood when the Potomac goes over its banks. The new service station will be under the management of Master Sergeant "Jake" Holtzman, whose untiring efforts are making the Post Exchange, the Post Exchange Restaurant and the Service Station a real and more appreciated convenience to the personnel of the post and to visiting members of other posts.

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AN A-17 WITH RETRACTABLE LANDING GEAR

Major Carl Cover, Air Reserve, former Air Corps officer and now Vice President of the Douglas Aircraft Company, Santa Monica, Calif., en route by air from the Northrop Corporation's factory, Inglewood, Calif., to Scott Field, Ill., via Randolph Field, paid a brief visit to the San Antonio Air Depot on August 13th, conferring on certain modifications in O-43 airplanes. He was flying a new experimental Northrop plane to be offered to the Air Corps, which looks like an A-17 except that it has a retractable landing gear. The Depot pilots were very much interested in viewing it.

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FAIRFIELD NEEDS SOME OF POST FIELD'S WEATHER

Announcing that work on the new swimming pool at Patterson Field, Fairfield, Ohio, is progressing very nicely, the News Letter Correspondent expresses doubt if any except the hardy souls will be able to indulge in swimming this season. He states that even in mid-summer it requires considerable fortitude to dive in a newly filled pool, as the tap water at that station is seldom warmer than 52 degrees Fahrenheit.

The News Letter Correspondent at Fort Sill, Oklahoma, states that Post Field, stripped of the major portion of its personnel by the absence of the 1st Balloon Squadron, is being run by a skeleton crew comprised of the Flight E personnel. With "Old Sol" setting new high temperature records every day, he says that the heat bids fair to make the figure of speech - "Skeletonized Personnel" - an actuality, for 115 deg. in the shade on a plain where the only shade is in a hole in the ground is the new proud record.

Maybe the Fairfield swimming pool would be much in demand at the Oklahoma station.

2ND BOMB. GROUP IN SECOND ARMY MANEUVERS

Participation in the Second Army Maneuvers was the outstanding event on the activities calendar of the 2nd Bombardment Group, Langley Field, Va., for the month of August.

Eighteen planes of this Group left Langley Field on Saturday morning, Aug. 1st, on a non-stop flight to Chanute Field, Rantoul, Ill., to attack the mythical enemy concentrated there. Led by Lieut. Colonel Charles B. Oldfield, the initial leg was precisely executed, and, after a brief aerial review, the echelons landed for lunch and the servicing of aircraft. Later in the day, all participating units continued on to Selfridge Field, where they again passed in review and then landed for the night.

All personnel enjoyed a day of rest on Sunday, but at noon on Monday things were again astir as preparations were made for the flight to Fort Knox, Ky. Augmented by the 1st Pursuit Group from Selfridge Field and the 13th Attack Squadron from Barksdale Field, La., the 2nd Bombardment Group participated in the spectacular aerial concentration over Fort Knox, returning immediately afterward to Patterson Field, Fairfield, Ohio, for the night.

On Tuesday morning, the Group returned to its base at Langley Field after a brief, but very enjoyable, inning of "war games."

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PURSUITERS RETURN FROM FIELD EXERCISES

The 36th Pursuit Squadron returned to Langley Field following very successful field and aerial gunnery exercises at Virginia Beach during the period July 22nd to August 12th.

The exercises consisted of moving the Squadron to the advanced airdrome by air and motor transportation; establishing a camp in the field; performing daily gunnery missions on tow targets; refueling and maintenance of airplanes; and returning the organization to Langley Field.

The camp site was ideally situated at the Virginia National Guard Airport, about 2½ miles from Virginia Beach, where there was an excellent gunnery range. The biggest percentage of the firing was performed above 10,000 feet, in accordance with the current Training Program. Lieut. W.H. Gist was the Deadeye Dick of the Squadron during the Maneuvers. The close proximity to Virginia Beach offered fine recreation facilities for all concerned after regular duty hours.

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Second Lieuts. Herbert H. Hoover, Harry W. Markey and Lawrence M. Thomas, Air Res., Mitchel Field, N.Y., are continued on active duty until July 3, 1939.

RESERVE OFFICERS TRAIN AT MOFFETT FIELD

Captain George E. Henry, Air Corps Unit Instructor and Commanding Officer of the Air Corps Detachment, Municipal Airport, Oakland, Calif., reported on August 1st for duty at Moffett Field, Calif., in connection with two 14-day active duty training periods for Reserve Officers of the Second Reserve District, 9th Corps Area.

On August 2nd, ten men from the Air Corps Detachment were sent to Moffett Field to take care of the airplanes and equipment to be used during the training period, August 2nd to 29th, inclusive.

The first period, August 2nd to 15th, was devoted to the training of twelve Reserve Officers from the 316th Observation Squadron and four Reserve Officers from the 381st Service Squadron, attached, under the command of Major Frank A. Flynn, Air Reserve.

The flying equipment consisted of two O-25C, two O-19B and seven PT-3A airplanes. The schedule consisted of individual training, check flights, formation flights, aerial gunnery, photography, dismounted pistol practice, instrument flying, radio missions and ground training. The News Letter Correspondent is of the belief that at the end of this period all officers were satisfied with the equipment available and the ideal conditions for this type of training afforded at Moffett Field.

The second period, August 16th to 29th, was conducted for eleven Reserve Officers from the 367th Observation Squadron and four Reserve Officers attached, under the command of Major John C. Gray, Air Reserve. The equipment was the same as for the first period, and the schedule was repeated.

In addition to the heavier-than-air training, all Reserve Officers were afforded the opportunity to make observation flights in the Moffett Field airship. This was an innovation, indeed, for most of the personnel at the camp who were able to take advantage of this additional experience.

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LANGLEY ATTACKERS IN 2ND ARMY MANEUVERS

Captain Ned Schramm, Commanding Officer of the 37th Attack Squadron, Langley Field, Va., led a formation of four A-8 Attack planes to Chanute and Bowman Fields, where from August 6th to 8th the personnel participated in the Second Army Maneuvers. Upon returning to Langley Field, three of the airplanes, with Lieut. Stuart G. McLennan as flight leader, departed for Fort Benning, Ga., where the airmen cooperated with other troops. Master Sergeant Nero, Staff Sergeants Byerley and Gott accompanied this flight as mechanics.

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NIGHT AERIAL ARTILLERY ADJUSTMENT

The 316th Field Artillery, Fort Bragg, N.C., recently conducted a most interesting problem in night artillery firing, employing aerial observation as the sole means of adjustment. In this experiment the 155 mm. G.P.F. gun and the 240 mm. howitzer were used.

The aviators were informed as to the general location of the target, a white panel, 6 x 6 yards, placed flat on the ground at a range of around 10,000 yards from the battery positions. The aerial observer located this target at night and transmitted its coordinates to the artillery battalion command post by radio. The target was located with such accuracy that the greatest error of the firing batteries on the first shot was a three hundred yard range error made by the battery firing the G.P.F. All rounds fired would have been effective on target assumed - a concentration of hostile tanks in an area of some 300 yards square.

Although there was a full moon on the night of the problem, conditions were not the best because the atmosphere was hazy, and from time to time heavy clouds covered the moon. It was found that the white target could be seen better when the moon was obscured by a cloud. The aerial adjustment was considered to be practically as good at night as by day and was so effective that Battery "D", 36th Field Artillery, commanded by Captain Dan B. Floyd, F.A., secured a direct target hit. As a result of this test it was concluded that night aerial observation is practicable. If the target can be located and the initial adjustment made by the light of star shells or flares dropped from another airplane it should be as feasible as is night aerial bombing.

The entire credit for the initiation of the experiment in night artillery firing, using aerial observation, belongs to Lieut. Colonel Charles M.Busbee, Field Artillery, commanding the 36th Field Artillery. Captain Dan B. Floyd was in command of Battery "D," 36th Field Artillery, 240 mm.howitzers, and 1st Lieut. John D.F. Phillips commanded Battery "C," 36th Field Artillery, 155 mm. G.P.F. guns. The aerial observation was performed by Major E.P. Gaines, Air Corps, pilot, and 1st Lieut. Eugene H. Rice, Air Corps, observer.

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AIR CORPS OFFICERS ATTENDING WAR COLLEGE

Ten Air Corps officers are members of the 1936-37 Class at the Army War College, viz: Lieut. Colonels Ralph P. Cousins, Willis H. Hale, Clinton W. Howard, Majors Carl W. Connell, Muir S. Fairchild, William E. Farthing, Romeyn B. Hough, Jr., Arthur W. Vanaman, Ralph H. Wooten and Capt. Charles E. Thomas, Jr.

RADIOING TO THE PHILIPPINES

The News Letter Correspondent from Clark Field, Pampanga, P.I., announces that an amateur radio station has been set up at that post by Lieut. W.M. Canterbury, Air Corps, and adds:

"For the benefit of those desiring to communicate with friends at Clark Field or Fort Stotsenburg and for amateurs desiring to make contact the following information is given: The call letters are K A I C F. Frequency, 7150 K.C. Daily schedule is maintained at 0830 Greenwich Civil Time. Due to low power, however, Lieut. Canterbury recommends that messages be sent thru K A I H R, the army amateur radio control net of the P.I., allowing constant contact with the U.S. Persons not having the address of a nearby amateur station can have messages sent without charge by mailing them to the Army Amateur Radio Station, care of the Corps Area Signal Officer."

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RESERVE OFFICERS TRAIN AT LANGLEY FIELD

Twenty-one Reserve Officers reported at Langley Field, Va., on July 19th for two weeks' active duty. Seventeen of these officers were assigned to the 20th Bombardment Squadron for training, while the remaining four were assigned to the 8th Pursuit Group. An average of seventeen hours' flying time was given each pilot, along with several lectures covering ground training subjects. All but two pilots checked out in the B-10B type airplanes, and the training was carried out without any casualties or damage to equipment.

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AIRMEN ATTENDING ARMY INDUSTRIAL COLLEGE

Nine Air Corps officers are members of the 1936-37 Class at the Army Industrial College, Washington, D.C., namely: Majors Harrison W. Flickinger, Alonzo M. Drake, Alfred J. Lyon, Russell L. Maughan, John I. Moore, Max F.Schneider, Myron R. Wood, Captains Edmund C. Langmead and Richard H. Magee.

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35TH PURSUITERS COMPLETE AERIAL GUNNERY

The 35th Pursuit Squadron returned to its home station, Langley Field, Va., from Virginia Beach, on August 5th, following the participation of personnel in aerial gunnery on tow targets. All pilots fired the record course in this particular event, and gunnery practice on ground targets is now being held to continue the qualifications.

"We hope to render, upon the completion of gunnery practice, a report of 100% qualification, all EXPERT AERIAL GUNNERS," is the comment of the News Letter Correspondent.

SEVENTH BOMBARDMENT GROUP COMPLETES TRAINING FOR F.Y. 1935-1936

A varied amount of training was engaged in by the 7th Bombardment Group, Hamilton Field, Calif., during the Fiscal Year 1936, involving maneuvers and exercises which incorporated problems of tactics, technique and logistics; operations of the Group incident thereto away from its home base, and training of personnel in the technique of bombing, gunnery and navigation.

Particular emphasis was placed in developing members of combat crews to that point wherein they could perform adequately the duties to which they were assigned. This Group has increased its efficiency and benefitted immeasurably by the training performed. Based upon the ground work which has been laid down during the past training year, the Group will continue vigorously to stress all training which will enable it to approach more closely those standards which are demanded of an efficient Air Corps combat unit.

During the training year, the following maneuvers and exercises were engaged in by this Group:

San Joaquin Exercises:

In these exercises, conducted November 4 to 17, 1935, the Group moved to individual squadron airdromes, located at Merced, Visalia and Coalinga, in conjunction with the concentration of other units of the 1st Wing to other bases in the San Joaquin Valley. Supplies and equipment necessary for the maintenance of the units were moved into the field. Logistical experience was gained in concentrating all units of the Group on one airdrome, moving them to dispersed airdromes and supplying and loading bombs at one main and three dispersed airdromes. The tactical operations involved missions of the Group in bombing and machine gunnery against targets at Muroc Lake Air Corps Camp. In these operations the Group flew approximately 500 miles per day.

Experience in command and staff control was gained, particularly with reference to issuance of orders and handling of reports. All methods of transmission of orders were employed. Orders were received from Wing Headquarters, ordinarily by teletype. They were transmitted to the squadrons by radio or by airplane messenger. Particular stress was placed on delivering to all units orders sufficiently in advance so that for each mission careful planning and preparation could be made by the subordinate units.

Florida GHQ Maneuvers:

In these exercises, conducted from December 2 to 15, 1935, the personnel and airplanes of the 19th and 7th Bombardment Groups were consolidated. All staff work and planning was accomplished well in advance of the date of departure of this Group for March Field, and the control at the outset and throughout the exercises was satisfactory from the Group standpoint.

Invaluable experience was gained in moving the Group as a unit by air from March Field to Vero Beach in 21 hours. The experience gained by the Group in operating from airdromes of limited dimensions, in conducting flights to the limit of range of the airplanes, in navigation, radio control and formation flying contributed to increasing combat efficiency in the organization. Upon clearing Maxwell Field on the return flight, all officers were afforded opportunity of individual navigation, further augmenting their experience.

Muroc Lake Exercises:

These exercises, March 9th to 20th, 1936, inclusive, were devoted entirely to individual and formation bombing, employing the smaller practice bombs, 300-lb. demolition bombs and concrete bombs, varying in sizes from 600 to 2,000 lbs., manufactured at Muroc Lake under the direction of the Wing Ordnance Officer.

The movement of personnel and supplies to Muroc was accomplished by air and motor transportation. Thirty-nine 300-lb. demolition bombs, together with components, were moved from Hamilton Field to Muroc by air.

Experience was gained in unit and individual high altitude operations, involving the use of oxygen for all members of combat crews; in logistics in handling and loading the 600, 1100 and 2000-lb. bombs; in establishing bomb dumps with bombs dispersed over an area as would be necessary in wartime operations. Further experience was gained in taking off and climbing to altitude with full load of the heavy bombs. The exercises contributed to efficiency in tactics and technique; experience in command and staff control, and to increasing the efficiency of the combat teams with respect to performing bombardment missions.

31st Bombardment Squadron at Medford, Oregon:

These exercises were conducted August 17 to 24, 1935, inclusive. The 70th Service Squadron established and maintained camp, transported all supplies, transported bombs from the railhead to the airplanes, loaded ammunition and furnished 1st and 2nd Echelon maintenance for the 31st Bombardment Squadron.

The purpose of this maneuver was to obtain data on personnel, operations, maintenance, handling and loading of munitions, servicing, etc.

Valuable data was obtained in complying with the above mentioned requirements, and valuable experience was given to all officers and enlisted men who participated in the above exercises.

Bombing Activities.

An orderly program of rudimentary and advanced instruction in bombing was required, together with actual bombing practice. The ground instruction consisted of an elementary course in bomb sight operation, in conjunction with eight hours' training om the bomb trainer, progressing to a complete advanced course in the theory and operation of the bomb sight and allied armament equipment, such as bomb racks, bombs, bomb components, etc. The advanced course consisted of 10 hours' ground school work for every pilot and observer assigned and attached to Bombardment squadrons at Hamilton Field and, in addition, 15 enlisted bombardiers.

This Group has a bombing target adjacent to the field in the shallows of San Pablo Bay. The use of this target is frequently limited by fog and low ceilings, especially in the winter months. Therefore, in order to carry out our extensive bombing operations and conduct the many required service tests and test bombing at all altitudes and speeds within the range of the Martin Bombers, the Mather Field bombing range was used in addition to the Hamilton Field range. A semi-permanent camp at Mather Field has been maintained and squadrons have been based thereat for the accomplishment of bombardment training.

Each squadron took its turn in camping at Mather Field while it completed training of assigned and attached personnel. While at Mather Field the units concentrated on bombing alone. Missions were conducted continuously, from early in the morning until late in the evening, of every day in camp. Under that program, one squadron dropped over 1100 bombs and completed practically all its old TR 440-40 bombing inless than 10 days. The other two squadrons, handicapped by the comparatively bad winter weather, took somewhat longer, but the daily average of bombs dropped was over 100 each day. All commissioned personnel of the Group and Station Complement completed the bombing requirements under the old TR 440-40.

Objectives assigned by Wing Training Directive (F.Y. 1936) were as follows:

1. Raise the bombing altitude.
2. Carry out problems in which long range flights and bombing are engaged in concurrently.
3. Salvo bombing at high altitude by single planes, elements, squadrons and group.
4. Training and practice in bombing from 1,000 to 5,000 feet .
5. Development in procedure and recommendations for equipment necessary to destroy targets (water and land) at altitudes below 1,000 feet.

All squadrons participated in these phases of bombing. A total of 1230 bombs were dropped from a high altitude. The results are considered satisfactory, considering the equipment. Probable errors are now being compiled on all bombing which will indicate the present efficiency of this Group, based upon its past experience.

Intermediate altitude bombing has also produced gratifying results. Upon the only occasion when the Group dropped demolition bombs, a squadron salvo of 15 bombs netted 13 direct hits.

Many missions involving long range problems have been completed. A general investigation of various methods of salvo bombing was instigated, showing that a trained bombardier could be depended on to deliver a very effective salvo when all bombs in the formation were dropped on signal of the leading bombardier. These missions also contributed valuable information on the pattern obtained from individual, flight, squadron, and group salvo, also train releases.

The 11th Bombardment Squadron was designated to drop 400 bombs allotted for conducting the service test of a new type bomb. Four teams were selected, using only the most proficient bombardiers. Approximately two-fifths of the bombs were dropped by salvo release and the same number by release in train. The balance were dropped individually to check pertinent ballistic charts.

In order to cover the speed range of the airplanes, teams were assigned to fly at various calibrated air speeds. The results were uniformly good. The salvo releases were all manual and gave greater dispersion than was expected. However, the train releases were affected by the bomb sight electrically, and produced very small impact errors.

Aerial Gunnery

Three squadrons of this Group completed all of their assigned and attached commissioned personnel and the enlisted gunners of their combat crews in the course prescribed by the tentative TR 440-40. The gunnery range off the Pacific Coast has been used for this purpose, but training was severely handicapped due to the prevalence of fogs in that place. In spite of this disadvantage, 96 members of this Group completed the required course, 86 qualifying as Expert, 5 as Sharpshooter and 5 as Marksman. The number of rounds of 30 cal. ammunition expended totalled 242,824.

Skeet Shooting

All combat personnel of the Group have participated in skeet shooting, expending 38,385 rounds of 12-gauge shotgun ammunition for this purpose. Skeet shooting constitutes a very important part of the training required to make an expert aerial gunner. The News Letter correspondent recommends that some form of standard commercial skeet gun be provided to take the place of the riot guns now used for this purpose.

High Altitude Missions of all Types.

Realizing that the greater part of future operations will be conducted at high altitudes, this Group has continually emphasized operations at altitudes requiring the use of oxygen. Of 278 missions conducted at high altitude, most were bombing operations requiring from one to two hours of oxygen, there being used 3,320 litres of liquid oxygen and 3,700 cubic feet of gaseous oxygen. Seventy-five officers, cadets and enlisted pilots have participated. Excellent and valuable training was afforded all combat personnel in the Bombardment squadrons in this high altitude work. Much discomfort was experienced on all of these missions. Pilots found that flying the precise and accurate courses necessary to efficient high altitude bombing, and at the same time using the microphone and sucking an oxygen tube was very fatiguing. The bombardier, too, found that manipulating the bomb sight and related controls called for much greater exertion than at low altitudes. Upon return to the ground, those participating in these flights became drowsy and lethargic, and fatigue appeared out of proportion to the time flown. However, as the flying personnel became more accustomed to and proficient at operating at high altitudes, the missions became less fatiguing.

Navigation Training

During the past training year, the 7th Bombardment Group trained a total of six officers in Dead Reckoning Navigation. The final mission of the course is the interception of a commercial vessel, approximately 200 miles at sea. These have been very successful and, it is believed, the interception of vessels at sea by the whole Group will be a matter of daily occurrence in the near future.

A number of difficulties have been encountered. The first of these has been lack of equipment, particularly suitable airplanes, draft sights and plotting facilities. The second has been the amount of time available to the personnel taking the course. Other duties, such as Wing and GHQ maneuvers, bombing, machine gunnery, squadron duties, etc., have interfered more than the lack of equipment. The equipment situation is gradually being overcome.

A radio station has been installed in the 88th Obs. (LR) Squadron, which stays in direct contact with airplanes while on navigation missions. This prevents interfering with the Group Station, which was necessary at the beginning of the navigation instruction given at Hamilton Field. Three amphibian airplanes have been assigned to this station and are being used for navigation training. At present, one Martin Bomber is completely equipped for dead reckoning navigation and has been used constantly to supplement the training done in the amphibians. Plotting boards and drafting machines have been built, and plotting facilities are now very satisfactory. A sufficient number of drift sights has been obtained to carry on training in the Navigation School, and it is hoped that in the near future, enough drift sights and other equipment will be made available to equip four airplanes in each squadron, with a complete set of navigation instruments.

Training in celestial navigation has been held in abeyance due to the experiments being performed by the 19th Bombardment Group at March Field. It is believed that new methods will probably be developed by the 19th Bombardment Group, which had for its primary missions the experimentation with, and development of, suitable methods for celestial navigation.

Service Tests Conducted by the Group.

During the Fiscal Year 1935-36, the Group has conducted 30 service tests required by the Materiel Division, Wright Field, Dayton, Ohio. Of this number, 20 have been completed to date and required reports forwarded. The flying time devoted either wholly or in part to conducting these tests totalled 2,716 hours.

Summary of Flying

A total of 17,513:50 hours pilot time has been flown by members of this Group. This is an average of 271:45 per pilot, including pilots of the Station Complement and those on Group Staff duty, who naturally do not fly as much as regular members of combat crews.

The average number of airplanes in commission daily was 23.81, out of an average of 30.18 airplanes at Hamilton Field.

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PURSUIT GROUP HEADQUARTERS MOVES INTO THE FIELD

A convoy of three 2½-ton trucks, two reconnaissance cars, and seven privately owned automobiles, comprising the first move of the 8th Pursuit Group Headquarters, GHQ Air Force, left Langley Field, Va., for camp at the National Guard Airport, Virginia Beach, Va., at 6:45 a.m., August 12th. The Air Echelon of two PB-2A's, one XP-6H and one P-12F took off from Langley Field at 9:00 a.m.

Pursuit Headquarters with additional attached personnel engaged for two weeks in Field Exercises, consisting of aerial and ground gunnery missions, using the new PB-2A airplanes.

With the flight crews busy servicing, inspecting and maintaining the airplanes, the office personnel were engaged in operating the Group in the same manner as when they are in garrison at Langley.

At the Final Critique of the Second Army Maneuvers at Camp Custer, Mich., on August 20th, Lieut. Colonel Follett Bradley, Acting Chief of Staff, GHQ Air Force, made substantially the following remarks:

Military aviation is divided into two main categories. In the first, wherein the mission is to collect information of the enemy, fighting is done only in self defense. In the second, the primary job is to fight.

The former consists of Observation aviation and balloons. One group, normally of three squadrons and 44 airplanes, is assigned to each field army, and one group to each corps. In addition, each corps has one balloon group. This assignment permits the allotment of one squadron of airplanes and one of balloons to each division, although they do not form integral parts of the division.

In the Second Army Maneuvers just completed, all aviation, like all the ground forces, was at greatly reduced strength, due to the fact that sufficient airplanes and personnel to meet the requirements are non-existent. To Blue was assigned two National Guard Observation squadrons, the 107th and 108th, and one regular balloon squadron. Red had but one flight of Observation airplanes - from the Regular Army and Organized Reserves.

I am informed that all of these units did splendid work and greatly assisted the commanders of the ground forces by furnishing them with a continuous flow of vital intelligence of the enemy. In addition, during those times when other communications were impeded, they were helpful in keeping the commanders informed of the location, disposition, and needs of their own units. This assistance was of particular importance on account of the activity of the Red mechanized force in cutting Blue's ground channels of communication.

One criticism of the operations of Observation aviation was noted by General Craig, Chief of Staff of the Army. In their zeal and eagerness to do their job in the best possible manner, they often flew so low in the fire fight as to subject themselves to needless danger of being shot down by rifle and machine gun fire.

I want to say a word for the "forgotten man" of aviation,- the observer. Little glamour attaches to his role, yet the length of time required to produce a fully trained competent observer is as great as that to train a pilot. He must know organization and tactics of large ground units. He must fly with any pilot to whom he is assigned; he is at a great disadvantage if anything goes wrong with the pilot or airplane; he works in cramped space often in extreme discomfort; he must keep one eye in the air against hostile Pursuit, and the other on the ground. His is a responsible and unenviable lot and he deserves a big hand.

Division, Corps and Army Commanders should exercise great care in the assignment of observation missions. The best criterion is to assign missions to it which cannot be performed by other agencies. Within its own field, no observation is as good as that of a ground observer using field glasses from a good O.P. Under favorable conditions balloons are excellent, if there is a sufficient degree of air superiority to permit them to keep station, for the adjustment of Corps and Army artillery fire. Airplanes with their trained crews are not easy to replace, and should be conserved to perform important missions which circumstances prevent other agencies from accomplishing. Functions assigned to Observation airplanes during these maneuvers, and quite properly, was the verification or disproof of specific items of important intelligence furnished by other agencies.

The GHQ Air Force comprises all units of Attack, Bombardment, and Pursuit Aviation stationed in continental United States. It also has a few Reconnaissance squadrons for its own purposes, and some transports. For this maneuver, only a few squadrons of the GHQ Air Force could be assigned. All Pursuit was Blue, and all Bombardment and Attack were Red. Had sufficient forces been available, all classes of combat aviation would, of course, have been assigned both to Red and Blue. The assignment adopted permitted Pursuit to perform its proper role of interception and attack of enemy striking aviation - Attack and Bombardment. Unfortunately, however, there was no opportunity afforded the mechanized force to operate in the face of opposition by its most potent and dangerous enemy - Attack Aviation. It is pertinent here to quote a despatch received day before yesterday by International News Service from their correspondent in Spain, -

> Mr. Knickerbocker: The Reds "made a daring drive with 200 motor trucks from Guadalajaro to Atienza, striving to cut off a rebel column ----, but the attempt met with disaster. Before the 200 trucks carrying around 2000 troops came into contact with the white forces, a squadron of White bombers (attack aviation) located them, and in a murderous attack with machine guns and bombs, sustained over several hours, destroyed the entire column. Returning again and again with fresh bombs and ammunition, the White war planes left not one Red truck intact, while the White pilots reported that they flew low enough to see the bodies

of the Reds expelled in fragments from their exploding trucks."

That despatch referred to real bombs, real bullets and real fragments of bodies and it happened just three days ago.

Another effective weapon of Attack Aviation is gas, and I am told that the excellent imitation concocted by Colonel Brackenbury is not unknown here at Camp Custer. Some attacks were ineffective, but others produced from 80% to 100% casualties on their target. Troops who experienced such attacks will not need to be impressed further with the need for devising effective means of defense against them.

Pursuit Aviation is designed and trained to intercept and destroy hostile aircraft in flight. In recent months new Pursuit tactics have been devised whereby the fire of many Pursuit airplanes can be concentrated at one time on the target, instead of placing reliance entirely on the World War tactics of successive diving attacks. However, the problem of interception of the enemy will always be present to plague Pursuit, and I think it is not unfair to say that any interception of an enemy bombardment or attack formation without the assistance of a ground intelligence net is pure luck. At night, in my opinion, no interception can be depended upon.

And now for Bombardment. I have purposely left this to the last, because we of the Air Corps feel that its present capacity and future development are such that it is destined to play a major part in any war. In these maneuvers, the participation of Bombardment was more to show its capabilities than to assess results. This was necessarily the case because the limitations of time and space did not permit the maneuver to be so drawn as to afford even partial scope to the employment of Bombardment Aviation.

Although we do not like to put it so bluntly, the war time mission of the soldier is to destroy. We train during the years of peace to destroy our enemy in war,- to destroy his soldiers, his property, his will to attack us. Our national policy is one of defense. Our geographical situation, with friendly neighbors north and south, and vast oceans east and west, is such that an enemy must cross those oceans in tremendous force to impose his will upon us. Although Bombardment Aviation in Europe may be an instrument of aggression, with us it is a powerful agency of defense. Bombardment Aviation can destroy nearly anything built by man. It can destroy ships easily, and an enemy must come to us in ships.

To indicate briefly the power of [illegible] modern Bombardment, let me cite a few figures:

Last December the entire GHQ Air Force concentrated in Florida from points as far distant as California in less than 23 hours.

On more than one occasion during these maneuvers, bombardment aviation flew approximately 1000 miles non-stop, day and night, good weather and foul, and delivered a simulated attack at the appointed time.

Our navigators are so skillful that flights hundreds of miles to sea are of frequent occurrence. Regardless of the distance flown, we expect now an accuracy of about ten miles in over water navigation, and hope to improve on that.

The accuracy of our bombing is indicated by a demonstration held last week at Fort Benning, Georgia, in which a mean deviation of 4 mils (40 feet) was recorded from 10,000 feet. Good results have been obtained in high altitude bombing, and training along this line is being stressed.

Deliveries will soon commence on a contract for 13 4-engined Bombardment airplanes which, carrying 2,000 pounds of high explosives, can deliver this load to a target 1500 miles from its base and return and, in addition, carry sufficient defensive armament to make any attacking force give considerable thought before engaging in combat. In addition, airplanes of this type can readily reinforce the aerial defense of Panama, Alaska or Hawaii, flying non-stop. Excluding other factors of superiority, these modern engines of war cost less initially, cost less to maintain, and require fewer combat and maintenance officers and men than the number of present Bombers required to carry an equivalent bomb load.

Bombardment Aviation is the backbone of every air force in the world today. No one can stop its development nor predict its ultimate achievement. We of the Air Corps often speak of independent air operations and are occasionally misunderstood in our use of the term. We refer to the unquestioned tactical independence of Bombardment Aviation from ground troops. Strategically, there is the greatest of interdependence under one commander,- the Chief of Staff in peace and the commander of the field forces in war. We are proud to be a member of the Army team, and we expect, should war come to this country, to acquit ourselves well of the responsibility which will inevitably be reposed in us.

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The 37th Attack Squadron, Langley Field, Va., received four of its allotment of A-17 planes, and two more are expected soon. They will replace the A-8's which, after a year of faithful service with the 37th, were ordered to other fields. The high spirit of the Squadron has been further heightened by the arrival of the new equipment.

BIOGRAPHIES

COLONEL JOHN H. HOWARD

Colonel John H. Howard, Air Corps, who entered the military service during the Spanish-American War, was born at Dayton, Ohio, March 2, 1879.

Enlisting in the Coast Artillery on April 27, 1918, he served as Private, Corporal and Sergeant, Battery "L," 7th Artillery, until his honorable discharge on October 11, 1898. Reenlisting on February 11, 1899, with the 6th Cavalry, he served as Private, Corporal, Sergeant and First Sergeant of Troop M of that regiment. Following service in China with the 6th Cavalry in the Boxer Rebellion, from August, 1900, to May, 1901, he participated in the operations against the Philippine Insurrectos from May, 1901, to October, 1902.

Commissioned a Second Lieutenant of Cavalry, February 2, 1901, he was assigned to the 9th Cavalry, and was a member of that regiment until November, 1914. He was promoted to 1st Lieutenant, August 2, 1908, and graduated from the Mounted Service School, Fort Riley, Kansas, in 1910.

From November, 1914, to August, 1917, Colonel Howard was on recruiting duty at Fort Slocum, N.Y. He was promoted to Captain of Cavalry, July 1, 1916.

During the World War, he served with the 32nd Division as Adjutant, and overseas, until April, 1918, as Assistant Chief of Staff, G-1. He was then appointed to the General Staff, American Expeditionary Forces. He participated with the 32nd Division in the major operations in the Belfort Sector, Oise-Aisne, Aisne-Marne and Meuse-Argonne, receiving citations both from the Commander-in-Chief of the American Expeditionary Forces and from the Commander of the Tenth French Army for especially meritorious and conspicuous service. The French Government conferred upon him the Croix de Guerre with palm and made him a Chevalier of the Legion of Honor.

While in France, Colonel Howard attended the Command and General Staff College at Langres, and, following his graduation from this school, he served as Assistant Chief of Staff, G-1, 32nd Division, while it was assigned to the Bridge Head with the First and Second Divisions in Germany. Appointed Commander of the Port, Coblenz, Germany, and Assistant to G-4, Headquarters 3rd Army, Coblenz, Germany, he performed these duties from April to July, 1919. Upon his return to the United States in the latter part of July, he was detailed as an Inspector-Instructor, Texas National Guard, and he served in this capacity until September, 1920.

Detailed to the Air Service in October, 1920, Colonel Howard was sent to the Pilots' School at March Field, Riverside, Calif., for primary Flying training. This training completed March 25, 1921, he was transferred to the Air Service Observation School at Post Field, Fort Sill, Oklahoma, for advanced flying instruction. Upon the completion of his course of instruction at Post Field, he was rated "Airplane Pilot" effective October 14, 1921.

Colonel Howard's first regular assignment as an Air Corps officer was as Commanding Officer of Kelly Field, San Antonio, Texas, which duty he assumed on February 1, 1922. Relieved from this duty in July, 1924, to attend the Command and General Staff School at Fort Leavenworth, Kansas, he was assigned to duty, following his graduation from this School in July, 1925, as Air Officer of the Third Corps Area, Baltimore, Md.

From August 25, 1926, to August 2, 1929, he served as Air Officer of the Hawaiian Department, and during the course of this duty he drew up and perfected for the Air Corps plans for the Five-Year Expansion Program for the Hawaiian Department.

Following his relief from duty in the Hawaiian Department, Colonel Howard served as Commanding Officer of Mitchel Field, L.I., New York, and the 9th Observation Group, from September 5, 1929, to May 8, 1934. On June 5, 1934, he assumed his present duty as Commanding Officer of the San Antonio Air Depot, Duncan Field, Texas.

During the World War, Colonel Howard held the temporary rank of Major of Infantry, National Army, from August 19, 1917, to August 7, 1918, when he was promoted to Lieutenant-Colonel. He reverted to his regular rank, January 27, 1920. He was promoted to the regular rank of Major, July 1, 1920; to Lieut. Colonel, May 26, 1921, and to Colonel, November 1, 1932.

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COLONEL ARTHUR G. FISHER

Colonel Arthur G. Fisher, Air Corps, was born in Denton, Maryland, on November 24, 1877. He enlisted in the Regular Army, September 1, 1899, and served as a private and corporal, Troop H, 1st Cavalry, until April 29, 1901, when he was discharged to accept appointment as a second lieutenant of Cavalry.

Colonel Fisher was promoted to the rank of first lieutenant on April 6, 1908; to captain, July 1, 1916; to major (temporary) on August 5, 1917; to lieutenant colonel (temporary), July 30, 1918; and to colonel (temporary), October 26, 1918. He reverted to his permanent rank of captain on January 31, 1920; was promoted to Major, Regular Army, on July 1, 1920; to lieutenant colonel, April 23, 1921, and to colonel, August 1, 1932.

Colonel Fisher joined the 14th Cavalry at Fort Leavenworth, Kansas, on May 20, 1901. Ordered to Fort Grant, Alaska, in July of that year, he served at that post until August 21, 1903, when he was ordered to the Philippines. He served with the 14th Cavalry at various stations in the Philippines to October 20, 1905, participating in an engagement with hostile Moros at Cotta Pang Pang on February 14, 1904, and at Laksamana Usap's Cotta on January 7, 1905. Returning to the United States with his regiment, he served at the Presidio of San Francisco to February 7, 1907, and at Boise Barracks, Idaho, to February 8, 1908, during part of which time, from July 6 to September 27, 1907, he attended the School of Musketry at the Presidio of Monterey, Calif. Returning to the Presidio of San Francisco, he served there until June 20, 1908, when he was transferred to Fort Myer, Va., for duty with the 13th Cavalry, remaining at that station until February 27, 1909.

After another tour of duty in the Philippines, being stationed at Camp McGrath, he returned to the United States on February 12, 1911, and was again assigned to the 14th Cavalry, being stationed at Fort McDowell, Colorado, in command of the 8th recruit company to February 13, 1913, when he was transferred with his regiment to Eagle Pass, Texas, serving on border patrol duty to May 12, 1914. He then served at various posts in Texas to December 31, 1916, during part of which time, from May 30 to July 10, 1916, he participated in Colonel F.W. Sibley's Expedition into Mexico. He served with the 17th Cavalry at Douglas, Arizona, to July 30, 1917; and was Instructor, School of Fire, Fort Sill, Okla., to October 26, 1917, during which time he was graduated from the Field Artillery School. He then served with the 20th Cavalry at Fort Riley, Kansas, and Camp Logan, Texas, to November 10, 1917; and with the 307th Field Artillery at Camp Dix, N.J., to May 26, 1918.

Colonel Fisher sailed with the 307th Field Artillery to France, June 1, 1918, and served as Brigade Adjutant, 153rd Field Artillery Brigade, to October 1, 1918; and as Commanding Officer, 307th Field Artillery, to April 20, 1919, participating in the St. Mihiel and Meuse-Argonne Offensives. He was in command of troops, Base Sector #9, Antwerp, Belgium, to August 2, 1919. When he returned to the United States on August 16, 1919, he was assigned to duty as Assistant District Military Inspector of Reserve Officers' Training Corps District, San Francisco, Calif., to November 6, 1919. He then served with the 13th Cavalry, Fort Clark, Texas, to January 1, 1920, and as Inspector-Instructor, Texas Cavalry, National Guard, at Dallas, Texas, to October 1, 1920.

Upon being detailed to the Air Service, Colonel Fisher was a student at the Balloon Observation School at Ross Field, Arcadia, Calif., from October 5, 1920, to April 12, 1921. He was rated "Balloon Observer" April 26, 1921. He next took a course of instruction at the Airship School at Langley Field, Va., following the completion of which he was awarded the rating of "Airship Pilot," effective August 13, 1921. Stationed at Langley Field until June 30, 1922, he performed successively the duties of Commanding Officer, Commanding Officer of Airship Troops, Commandant of the Airship School and Assistant Commandant of the Airship School.

Following duty at the Primary Flying School at Brooks Field, Texas, from July 6, 1922, to February 28, 1923, Colonel Fisher was assigned to undergo a course in rigid airship training at the Naval Air Station at Lakehurst, N.J., and he was on duty thereat until August 9, 1924, when he returned to Langley Field for duty as student at the Air Service Tactical School. His graduation from this school in June, 1925, was followed by an additional year of duty as a student at the Command and General Staff School, Fort Leavenworth, Kansas.

Transferred to duty in the Panama Canal Zone, Colonel Fisher served on the Isthmus as Commanding Officer of France Field and the 6th Composite Group, and later as Department Air Officer and Commanding officer of the Panama Air Depot. His foreign service tour was followed by duty as a student at the Army War College, Washington, D.C., August, 1929, to June, 1930. Upon graduation, he was assigned to duty in Texas, being Air Officer of the 8th Corps Area from August 16, 1930, to November 2, 1931, and Commanding Officer of the San Antonio Air Depot, Duncan Field, Texas, from November 3, 1931, to June 1, 1934.

Colonel Fisher's next duty assignment was in the Office of the Chief of the Air Corps, Washington, D.C., where he was Chief of the Plans Division from June 9, 1934, to June 11, 1935. He was then transferred to Maxwell Field, Montgomery, Ala., where he is Commanding Officer of the post and Commandant of the Air Corps Tactical School.

For gallantry in action against hostile Moros in the Philippines in the engagements previously mentioned, Col. Fisher was awarded the Silver Star Citation with one Oak-Leaf Cluster.

In addition to the two lighter-than-air ratings, heretofore mentioned, Col. Fisher also holds the rating of "Airplane Observer," received September 22, 1925, following his completion of the special course in Observation at the Air Corps Advanced Flying School, Kelly Field, Texas.

OBITUARIES

Fog, the arch enemy of airmen, was responsible for the death on August 21st of two Air Corps officers, Captain Harold Brand and 1st Lieut. Anthony E. Curcio. During the course of a night flight from Moffett Field, Calif., Lieut. Curcio, the pilot, ran into fog and high wind in the treacherous hills of Altamount Pass, near Livermore, Calif. The airplane crashed into a hillside, some 100 yards from the pass the airmen had evidently been blindly searching for.

Captain Brand, who entered the military service during the World War, was born at San Diego, Calif., April 13, 1897. He attended grammar school and high school at Coronado, Calif., and then took a university correspondence course. At the time of his enlistment on December 11, 1917, in the Aviation Section, Signal Corps, he was part owner of a weekly newspaper.

Following the completion of his ground school course at the School of Military Aeronautics, University of California, Berkeley, Calif., on March 23, 1918, he took flying training at Rockwell Field, Calif., and later at March Field, Calif., and upon passing the required tests he received the rating of Reserve Military Aviator, was commissioned a second lieutenant in the Aviation Section, Signal Corps, November 9, 1918, and assigned to active duty at March Field, where he was a flying instructor, in addition to his other duties.

Transferred to the Hawaiian Department in March, 1922, Captain Brand was stationed at Luke Field for a period of three years and, following his return to the mainland, was assigned to station at the Primary Flying School, Brooks Field, Texas. He was on duty with the 11th School Group as Supply Officer, and later was Assistant Stage Commander. In February, 1927, he was transferred to Dodd Field, Fort Sam Houston, Texas, where he was Supply Officer of the 12th Observation Squadron.

In May, 1929, Captain Brand was transferred to the Office of the Chief of the Air Corps, Washington, D.C., where he was assigned to the Information Division as Chief of the Intelligence Section. Ill health necessitated his relief from duty in Washington, and in August, 1931, he was transferred to Rockwell Field, where he remained until October, 1935, when the field was abandoned as a station for Air Corps troops. He was then assigned to station at Moffett Field, Calif., and was on duty at this new Air Corps field as Technical Inspector, Operations Officer and Intelligence Officer. In addition to his rating as Airplane Pilot, he was, on August 10, 1929, rated as Airplane Observer. A the time of his death, Captain Brand had exceeded the 3500-hour mark in total flying time.

Lieut. Curcio was born in New York City on November 18, 1907. After graduating from the United States Military Academy in 1930, he was detailed to the Air Corps, taking his primary flying training at March Field, Riverside, Calif., and his advanced training at Kelly Field, Texas. He specialized in Pursuit, and upon his graduation on October 10, 1931, from the Advanced Flying School, he was rated an Airplane Pilot and assigned to duty at March Field, serving as Personnel Adjutant of the 17th Pursuit Group.

A student at the California Institute of Technology, Pasadena, pursuing a course of instruction in meteorology, September, 1933, to June, 1934, Lieut. Curcio was then assigned to duty at Rockwell Field, Calif., and, upon the abandonment of that field by the Air Corps in October, 1935, he was transferred to Moffett Field, Calif.

The heartfelt sympathy of the Air Corps is extended to the bereaved families of the deceased officers.

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JOHN J. McSWAIN

In the death on August 6, 1936, of the Honorable John J. McSwain, of South Carolina, Chairman of the Military Affairs Committee of the House of Representatives, the nation lost a staunch advocate of adequate preparedness for National Defense.

Mr. McSwain was untiring in his efforts to formulate a policy of adequate defense, and it was largely his disregard for his own health in the discharge of the responsibilities of his office that aggravated his physical condition. He was a firm believer in the potentialities of air power, and in the last session of Congress sponsored legislation to increase the commissioned and enlisted strength of the Army and to enlarge the Air Corps.

Himself a Captain in France during the World War, commanding Company A of the 154th regiment of Infantry until after the Armistice was signed, Mr. McSwain took an intense interest in the Army and did most of his traveling by airplane in order to inspect the military posts in various parts of the country.

Last January, in sending New Year's greetings to the officers and men of the Air Corps, through the Air Corps News Letter, he stated:

"I do not fail to think of the officers and men in the armed services, such as the ground force of the Army, the Marine Corps, and the Coast Guard. But since the Air Corps is in fact 'our first line of defense,' and therefore must be instantly ready at all times to perform its great mission of beating off and beating down any attempted invasion of our country, I confess an unusual interest in this new branch of the Service.

I have not suggested anywhere that other agencies and instrumentalities of defense may be discarded or neglected. Progress and improvement in the instrumentalities of warfare do not bring about substitutions for old agencies, but merely cause additions to them and thus a general increase in the number and kinds of weapons. But with an adequate and properly equipped and trained air force, coupled with our Navy and the Naval Air Force, we can relax somewhat as to land forces. Since our sole purpose in maintaining military establishments is to insure defense, we believe that the Air Corps and the Navy can so retard and hold back the initial stages of any possible invasion as to give us time to fill in the skeletonized organizations of the Regular Army and to recruit the National Guard up to war strength and to man the Organized Reserves with the unorganized militia, and to train these groups of land forces so that invasion will be prevented, and if not actually prevented, the invader may be promptly driven from our borders and punished as a warning for all time to all peoples."

Mr. McSwain was born in Laurens County, S.C., May 1, 1875. He graduated in 1897 from the South Carolina College, and began the practice of law at Greenville, S.C., in 1901. When war was declared against Germany, Mr. McSwain, then 42 years of age, entered the first training camp at Fort Oglethorpe, Ga. Upon completion of the course of instruction, he was commissioned a Captain in the National Army, and was assigned to active duty at Camp Beauregard, La. Following his honorable discharge from the Army in March, 1919, he returned to his law practice in Greenville. The following year he was elected to Congress, and thereafter was repeatedly reelected. He was appointed Chairman of the House Military Affairs Committee in 1932.

On the day of the funeral of Congressman McSwain, Lieut. Stuart G. McLennan led a flight of three A-17 Attack planes from Langley Field, Va., to Greenville, S.C., for the purpose of dropping flowers on the grave. Flying Cadets Eaking and Willoughby were the other two pilots, and the mechanics were Technical Sergeant Gossett, Staff Sergeants House and Caldwell.

In the masthead of each issue of "The Reserve Officer," a monthly publication, there appears this statement written by Mr. McSwain: "Let us pledge the Reserve Officers Association to nothing but unselfish, disinterested, patriotic efforts for the broad, forward-looking policies of defense."

DEATH OF THE SECRETARY OF WAR.

The War Department was advised of the death at Walter Reed General Hospital at 10:55 a.m., August 27, 1936, of the Honorable George H. Dern, Secretary of War. Mr. Dern's death came after several weeks' illness and resulted from cardiac complications, following a severe attack of influenza.

Mr. Dern contracted influenza last spring during an inspection of War Department activities in Florida. After a brief illness he apparently completely recovered from the attack and returned to duty in the War Department. However, he suffered a relapse about two months ago and has been in the hospital since that time.

Mr. Dern was born in Dodge County, Nebraska, September 8, 1872, the son of John and Elizabeth Dern. He was graduated from the Fremont (Neb.) Normal College in 1888 and attended the University of Nebraska in 1893 and 1894. He was a linesman and captain of the Nebraska football team which won the Missouri Valley championship. While at the University of Nebraska he was a cadet under Lieut. John J. Pershing, then professor of military science and tactics at that college.

After leaving college, Mr. Dern went to Utah where he became associated with his father in mining operations, subsequently becoming general manager of the Consolidated Mercur Gold Mines Company, owner of the largest gold mine of Utah. With Mr. Theodore C. Holt he was the inventor of the Holt-Dern roasting process for the reduction of refractory ores.

In 1914 Mr. Dern was elected to the Utah State Senate from Salt Lake County, serving in that body for eight years. During that time he was the author of a number of progressive measures which were enacted into law, including the Workmen's Compensation Act, Corrupt Practices Act, Mineral Leasing Act, Blue Sky Law and the Initiative and Referendum. During the World War he served as a member of the Utah State Council of National Defense.

Mr. Dern was elected Governor of Utah in 1924, receiving both the Democratic and Progressive nominations. Although Mr. Coolidge as the Republican nominee for President carried Utah by 30,000 votes, Mr. Dern was elected as a Democrat by 9,000. Four years later Mr. Dern was reelected, this time by a margin of 31,000, the largest majority ever given a candidate for governor in that State. At the same time Mr. Hoover as the Republican candidate for President carried Utah by 14,000.

While Governor of Utah, Mr. Dern served twice as Chairman of National Governors' Conference and declined re-election for a third term. From 1927 to 1933 he served as a member of the Executive Committee of that body. He was one of the organizers of the Western Governors' Conference, serving as its chairman in 1931 and 1932. He was proposed by a number of western States as a candidate for the Democratic nomination for Vice-President at the Chicago convention in 1932, but declined to permit his name to be presented, and personally seconded the nomination of Mr.Garner.

Mr. Dern's second term as Governor of Utah expired January 2, 1933. He declined to become a candidate for a third time and also declined to be a candidate for United States Senator. On March 4, 1933, he became Secretary of War. Mr. Dern was a member of the Congregational Church. He was a 33rd degree Mason, a Knight Templar and a Shriner, a member and former director of the Salt Lake City Chamber of Commerce, also a member of the American Institute of Mining and Metallurgical Engineers, the Delta Tau Delta Fraternity, the University, Alta and Country Clubs of Salt Lake City, and the University and Army and Navy Clubs of Washington. He was an officer and director of a number of mining and metallurgical enterprises and commercial companies, including the Holt-Christensen Process Company, Pleasant Grove Canning Company, First National Bank of Salt Lake City, Mutual Creamery Company and the First Security Trust Company.

In 1899 Mr. Dern was married to Charlotte Brown of Fremont, Nebraska. Five children, Mrs. Mary Baxter, Miss Elizabeth Dern, Mr. William B. Dern and Mr. James G. Dern, of Washington, D.C., and Mr. John Dern, of Chicago, Ill., survive him in addition to his widow.

In a statement issued by the Hon. Harry H. Woodring, the Assistant Secretary of War, he said:

"In the death of Mr. Dern the nation has suffered an irreparable loss. His long and brilliant career as a member of the State Senate, as Governor of his State and as Secretary of War has been distinguished by the highest standard of public service. His passing is a great personal loss to me and to his associates of the War Department who have long cherished his friendship and affection."

Admiral William H. Standley, Acting Secretary of the Navy, sent the following message to the Acting Secretary of War:

"Upon behalf of myself and the entire naval establishment please accept our sincere condolences upon the loss of The Honorable George H. Dern, Secretary of War, which is keenly felt by your sister service."

General Malin Craig, Chief of Staff of the United States Army, issued the following statement:

"Members of the Army of all ranks are deeply grieved to learn of the passing of their beloved Chief. Secretary Dern was a true friend of the Army. He worked unceasingly in behalf of national defense, sacrificing his health to the welfare of the country. Much of the progress made by the army in the past three and a half years was due to his intelligence, understanding and his eage devotion to the public interest. He had the broad viewpoint, sound judgment and wide knowledge that proved invaluable in solving the problems of the War Department. To those of us who served with him the Secretary of War was more than a superior, he was an intimate friend who merited and held our deep affection."

Funeral services for Mr. Dern were held at 4:00 p.m., on Saturday, August 29th, at the Mt. Pleasant Congregational Church, Washington, D.C., with the Rev. Dr. Russell J. Clinchy officiating. The funeral party, escorted by the 2nd Squadron, 3rd Cavalry, and the 1st Battalion, 16th Field Artillery, then proceeded to the railroad station, where it was received by a Guard of Honor, consisting of a battalion of Infantry and a battalion of Engineers. The funeral party then left by special train for Salt Lake City, Utah. Upon arrival in Salt Lake City on Tuesday, September 1st, at 8:00 a.m., the body will lie in state at the State Capitol until 3:00 p.m. The funeral will be held from the Capitol at that hour, with the Rev. Dr. Elmer I. Goshen and the Rev. Dr. Jacob Trapp officiating. Interment will be in Mt. Olivet Cemetery, with full military and Masonic honors.

Included in the official party accompanying Mr. Dern's body to Salt Lake City were Hon. Homer S. Cummings, Attorney General of the United States; Hon. Daniel C. Roper, Secretary of Commerce; Hon. Harry H. Woodring, Acting Secretary of War; Admiral William H. Standley, Acting Secretary of the Navy; Hon. Edward F. McGrady, Acting Secretary of Labor, and General Malin Craig, Chief of Staff, United States Army.

The Hon. Cordell Hull, Secretary of State, was unable to accompany the party due to a specific request from the President that he remain in Washington as Acting Head of the Government.

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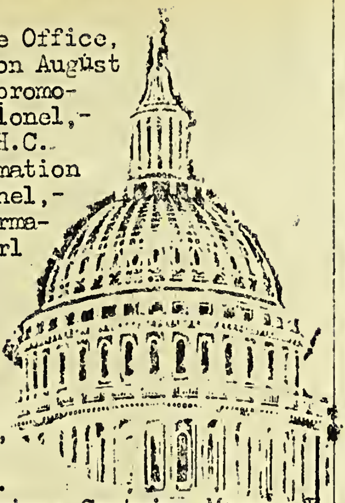
First Sergeant Herbert Cassetty, 24th Pursuit Squadron, Air Corps, Albrook Field, Panama Canal Zone, was placed on the retired list on August 31, 1936.

Staff Sergeant Lawrence Sweeting, 61st Service Squadron, GHQ Air Force, Mitchel Field, L.I., New York, was placed on the retired list August 31, 1936.

The active duty assignments of three second lieutenants of the Air Reserve were extended, as follows: Ben A. Mason, Jr., Luke Field, T.H., to Oct. 14, 1937; Theodore M. Melden, Jr., Mitchel Field, to July 3, 1938, and David G. Desmond, Barksdale Field, to October 17, 1938.

WASHINGTON OFFICE NOTES



Officers on duty in the Office, Chief of the Air Corps, on August 26th received temporary promotions, as follows: To Colonel,- Lieut.-Colonel Harrison H.C. Richards, Chief of Information Division; to Lieut. Colonel,- Major Ross G. Hoyt, Information Division; Majors Carl W. Connell, Lynwood B. Jacobs, Supply Division.

Officers who recently returned from leaves of absence were Major David A. Myers, Medical Corps; Major Alfred W. Marriner, War Plans and Training Division; Major Edward V. Harbeck, Inspection Division; Captains Mervin E. Gross and Donald F. Stace, Supply Division.

Officers returning from temporary duty at other stations were Major Charles P. Prime, War Plans and Training Division; Captain Stewart W. Towle, Personnel Division.

Major Charles Y. Banfill, War Plans and Training Division, made a navigation flight to Key West, Fla.

Recent visitors to the Chief's Office during the course of navigation flights, or while en route to other stations, were: Lieut. Colonel Ralph H. Wooten, from Langley Field, for duty as student at the Army War College; Major Richard H. Magee, Maxwell Field, for duty as student at the Army Industrial College; Captain Roland Birnn, from Fort Leavenworth, Kansas, enroute to Maxwell Field for duty as instructor at the Tactical School; Major Harry A. Halverson, from Fort Leavenworth; Lieut. Colonel Edgar P. Sorenson from Wright Field, O.; Captain Ronald A. Hicks, Instructor, National Guard, Birmingham, Ala.; 1st Lieuts. Thomas S. Moorman, on leave from Mitchel Field, and Fay O. Dice from Maxwell Field.

Major Carl W. Connell departed for duty as student at the Army War College.

Captain R.V. Laughlin departed on August 24th on leave of absence.

Lieut. Colonel Robert L. Walsh departed Aug. 20th to inspect Air Corps Reserve activities in the west.

Captain Lawrence J. Carr dropped in to say 'Howdy' to his friends during the course of a flight from Maxwell Field.

Lieut. Colonel H.W. Flickinger, from the Fairfield Air Depot, dropped in to sign the book and greet his friends. He is attending the 1936-37 course at the Army Industrial College.

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Major General Oscar Westover, Chief of the Air Corps, visited Kelly Field, Texas, on August 20th, gave a short talk to the officers of the post, and answered any questions which the personnel asked. General Westover, flying an A-17 Attack plane, landed and stayed overnight at Randolph Field, Texas.

General Westover returned to Washington on August 27th.

TEMPORARY PROMOTION OF AIR CORPS OFFICERS

The War Department announced on August 26th that, in accordance with provisions of an Act of Congress, approved June 16, 1936, the President authorized the temporary promotion of the following officers of the Air Corps:

LIEUTENANT COLONEL TO COLONEL

Arnold N. Krogstad
Walter H. Frank
Frank D. Lackland
Harrison H.C. Richards
Ira A. Rader
Douglas B. Netherwood
Lewis H. Brereton
Hugh J. Knerr
Eugene A. Lohman
Herbert A. Dargue
Follett Bradley
Shepler W.FitzGerald
Leslie MacDill
Lawrence S. Churchill
Clarence L. Tinker
Martin F. Scanlon
Byron Q. Jones
Davenport Johnson
Walter G. Kilner
Henry W. Harms

MAJOR TO LIEUTENANT COLONEL

William O. Butler
John G. Colgan
Vernon L. Burge
William B. Wright,Jr.
Raymond E. O'Neill
Frederick I. Eglin
Dudley B. Howard
Floyd E. Galloway
Calvin Earl Giffin
Stephen J. Idzorek
Harrison W.Flickinger
Carl William Connell
Thomas S. Voss
Thomas W. Hastey
Morris Berman
Walter Bender
Albert M. Guidera
James F. Doherty
Lynwood B. Jacobs
Frank W. Wright
Edgar P. Sorenson
Robert Olds
Ross Gordon Hoyt
William B. Mayer
Richard H. Ballard
Ralph H. Wooten
Harold M.McClelland
Wolcott P. Hayes
Edmund W. Hill
Walter F. Kraus
William E.Farthing

CAPTAIN TO MAJOR

Charles C. Chauncey
Walter E. Richards
Homer B. Chandler
Carl W. Pyle
John M. McCulloch
Charles W. Sullivan
Melvin B. Asp
George C. McDonald
Peter Emanuel Skanse
Alfred E. Waller
Malcolm N. Stewart
Odas Moon
Arthur G. Liggett
Westside T. Larson
Newton Longfellow
Martinus Stenseth
Rex K. Stoner
Bushrod Hoppin
John M. Davies
Lloyd Barnett
James B. Carroll
James Edward Duke,Jr.
Charles W. Steinmetz
John A. Laird, Jr.
Wendell B. McCoy
Walter T. Meyer
James D. Givens
William C. Farnum
Charles M. Cummings
William Turnbull
James A. Woodruff
Lester J. Maitland
Arthur I. Ennis
Frederick D. Lynch
Thomas L. Gilbert
William W. Welsh
Joseph W. Benson
Caleb V. Haynes
John F. Whiteley
Harold A. Bartron
Guy L. McNeil
Lewis S. Webster
Alfred L. Jewett
Louis C. Mallory
Clarence P. Talbot
Roy W. Camblin
Cornelius J. Kenney
Winfield S. Hamlin
Robert T. Zane
LeRoy A. Walthall
Lucas V. Beau, Jr.
Newman R.Laughinghouse
James M. Gillespie
Frederick vonH.Kimble
William J. Hanlon
David R. Stinson
Armor S. Heffley
Joseph T. Morris
Howard A. Craig
William R. Sweeley
George A. McHenry,Jr.
Carlyle H. Ridenour
Russell C. MacDonald
Bennett E. Meyers
Paul H. Prentiss
Robert S. Heald

Warren A. Maxwell
Frederick M. Hopkins, Jr.
Leonard D. Weddington
Paul E. Burrows
George H. Brown
Dale V. Gaffney
Elmer D. Perrin
Edward M. Powers
Richard H. Magee
Kenneth B. Wolfe
John V. Hart
Henry H. Reily
Dayton D. Watson
Donald D. FitzGerald
Austin W. Martenstein
Edwin B. Bobzien
John D. Corkille
Levi L. Beery
Carlton F. Bond
John DeF. Barker
Warren R. Carter
Thad V. Foster
Harold A. McGinnis
Harry A. Halverson
Charles T. Skow
Morton H. McKinnon
Walter B. Hough
William M. Lanagan
George P. Tourtellot
Walter K. Burgess
Paul C. Wilkins
George H. Beverley
Norman D. Brophy

---oOo---

NEW SKEET RANGE AT KELLY FIELD

The new skeet range at Kelly Field, Texas, is creating much interest and is giving the officers of the post an opportunity to compare skeet shooting with the more common trap shooting. The opinion is that it affords more practice in fast shooting and requires more ability than traps.

Captain Clyde K. Rich, Air Corps, has been placed in charge of the range and has organized five competitive teams of officers and cadets, not only for the practice but for the purpose of testing new equipment and determine the value of the training derived from fast shooting from all angles.

---oOo---

VARIED ASSORTMENT OF PLANES AT BOLLING FIELD

Although Bolling Field has about 65 pilots assigned or attached for flying, it has no active tactical organization. Most of the pilots are on duty in the Office of the Chief of the Air Corps, and some are attending the Army War College and the Army Industrial College. They maintain their flying proficiency by coming to Bolling Field at intervals and making short cross-country flights or local practice flights.

To give these pilots every opportunity to fulfill missions called for by flying regulations, Bolling Field has a great variety of planes. There are approximately 38 planes assigned to this station. In that group are 14 different types, representing almost all types of flying equipment. One PT-3A is kept for practice and check flights for Reserve officers. Two Boeing P-12E's and one P-26A are available for Pursuit practice. A Fairchild C-8 is assigned for photographic work only, and is kept busy by the Photo Section. A Douglas C-29 Amphibian and a Curtiss Condor C-30 are used as transports along with the two Douglas C-34's assigned to the Office of the Secretary of War for special flights. Three BT-2B1's are kept busy in instrument flying training. For general practice and cross-country flights there are ten O-38B's, six O-38F's, six new Seversky BT-8's and one BT-9. The National Guard Bureau has one O-38D and one O-43A. The arrival of two new A-17A airplanes for the Chief of the Air Corps and the Assistant Chief of the Air Corps adds another type to the group and practically covers all phases of flying except, perhaps, Bombardment. Since Washington is naturally a center of activity, these planes are all kept busy on various missions, and the variety of type is much appreciated.

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AWARD OF FRANK LUKE, JR. MEMORIAL TROPHY

The American Legion of Arizona will present the Frank Luke, Jr. Memorial Trophy to the 79th Pursuit Squadron, General Headquarters Air Force, U.S. Army, at Phoenix, Arizona, on Thursday, September 3rd. The award is made for the highest aggregate score in annual gunnery record firing.

This Trophy is presented in honor of one of the outstanding aviation heroes of the World War. It was awarded annually since 1931 to the Pursuit pilot of the Air Corps stationed on the West Coast who made the highest gunnery score. The conditions of the award were changed this year to provide that the presentation should be made to the organization having the highest aggregate score. The winning squadron will fly in a score of planes from its station at Barksdale Field to Phoenix to receive the award.

It is entirely appropriate that this ceremony should be held during the month of September, because it was during the period September 12th to 29th, 1918, that 2nd Lieut. Frank Luke, Jr., wrote his name in blood across the sky of the western front by performing the aerial feats for which his heroic death on September 29, 1918, placed his name among the four Army Air Corps pilots, who participated in the World War, to be awarded the Congressional Medal of Honor. During this brief fortnight Luke's meteoric career was crowded with spectacular events.

On September 12, 1918, he shot down his first aircraft during the war, an observation balloon. The balloon was recognized, by experienced pilots, to be the most difficult of aerial targets, ringed about as it was by a wall of ascending bullets from antiaircraft machine guns. From this time until he met his death on September 29th, Luke accounted for 21 enemy aircraft, mostly balloons. His death, the story of which has been pieced together since the War, was most spectacular and heroic. One account reads as follows:

"After having first shot down three enemy balloons and two planes, he descended low over the ground and killed eleven of the enemy, either with hand bombs or machine gun bullets. While flying low, his plane was hit from the ground and he himself was apparently wounded.

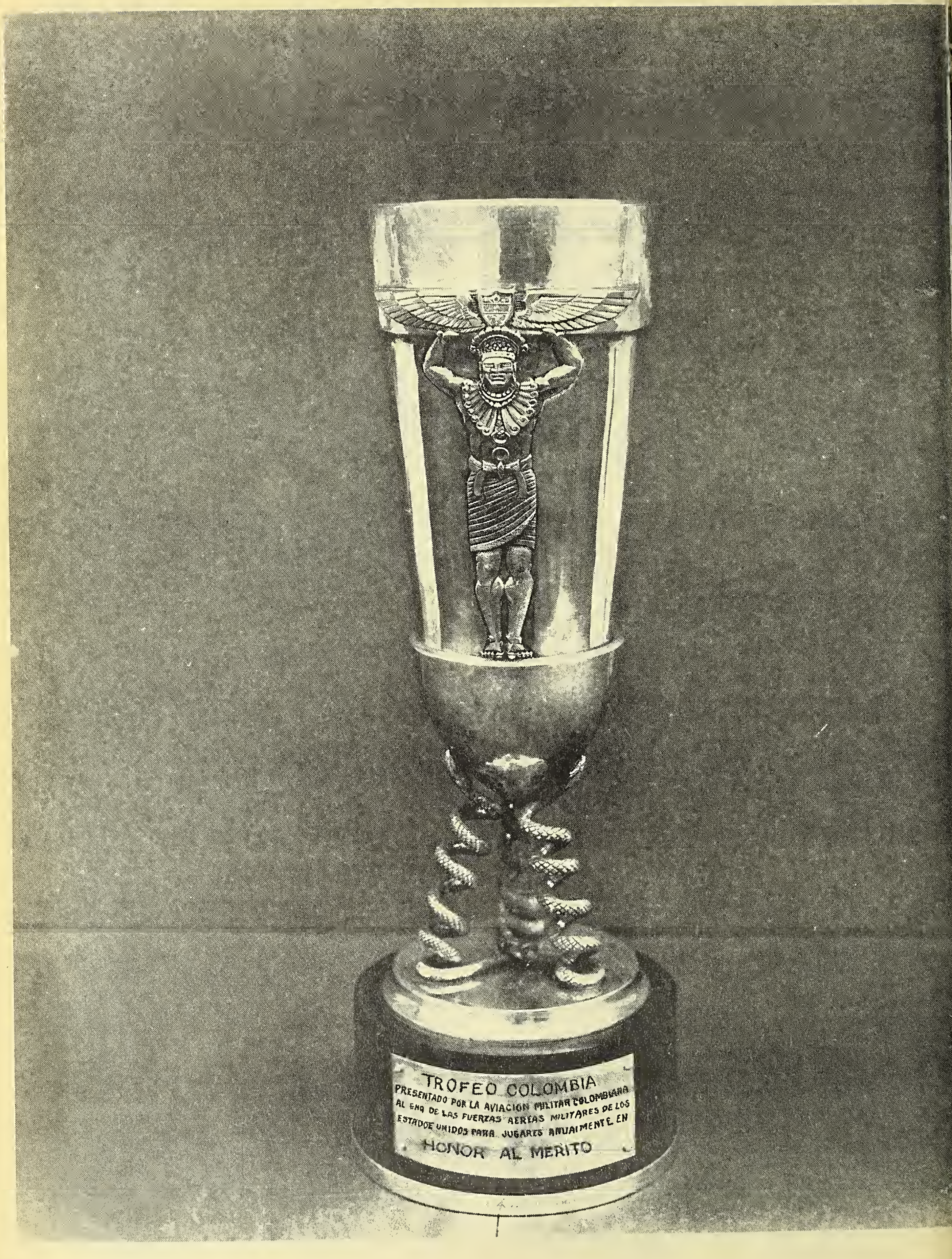
He made a successful landing; got out of his plane and when the enemy called upon him to surrender replied by drawing his automatic and opening fire. Thus standing he continued to defend himself until killed."

The citation awarding him the Congressional Medal of Honor reads in part as follows:

"For conspicuous gallantry and intrepidity above and beyond the call of duty."

The detailed arrangements for the ceremony on September 3rd are being made by Mr. E.P.

(See page 21).


TROFEO COLOMBIA
PRESENTADO POR LA AVIACION MILITAR COLOMBIANA
AL GHQ DE LAS FUERZAS AEREAS MILITARES DE LOS
ESTADOE UNIDOS PARA JUGARES ANUAIMENTE EN
HONOR AL MERITO

COLOMBIA PRESENTS TROPHY TO AIR CORPS

During the GHQ Air Force Maneuvers in the vicinity of Miami, Florida, in December, 1935, Major Benjamin Mendez, one of the foremost flyers of the Colombian Army, presented a trophy to the GHQ Air Force in the name of the Republic of Colombia. Appreciation for the donation of this Trophy was made in a letter addressed to the Minister of War, Republic of Colombia.

This Trophy, a photographic reproduction of which appears on the opposite page, is of silver, except for the base, which is mahogany. It is approximately 16 inches in height. A silver plate attached to the base bears the following inscription:

TROFO COLOMBIA
PRESENTADO POR LA AVACION MILITAR
COLOMBIANA AL GHQ DE LAS FUERZAS
AEREAS MILITARES DE LOS ESTADOS
UNIDOS PARA JUGARSE ANUALMENTE EN
HONOR AL MERITO

In keeping with the intent of the donor, as expressed in the above inscription, and amplified by Major Mendez in making the presentation, it is proposed to award this Trophy annually to that group in the GHQ Air Force which has the lowest accident rate per 1,000 flying hours each training year, as determined by the Inspection Division, Office of the Chief of the Air Corps.

Formal recognition of the above described Trophy for the purpose outlined was given by the War Department on August 11, 1936.

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Award of Frank Luke, Jr. Memorial Trophy

(Continued from page 20)

McDpwell, Department Adjutant of the American Legion, Department of Arizona. Participating in the ceremony for the Army will be five officers, six enlisted men, and two airplanes from the Headquarters, First Wing, GHQ Air Force, March Field, and the 79th Pursuit Squadron, the winning organization, consisting of twenty officers, fifteen enlisted men, eighteen Pursuit airplanes and one Transport airplane from Barksdale Field, La.

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RETIREMENT OF STAFF SERGEANT WILLIAM J. CREMERS

Upon the completion of over 30 years' active service, of which two years, two months and seven days were accredited double time for service in the Philippine Islands, Staff Sergeant William J. Cremers, 70th Service Squadron, Hamilton Field, Calif., was placed on the retired list of the U.S. Army, July 31, 1936.

Sergeant Cremers first enlisted in Troop A, 1st Cavalry, October 3, 1907, and served with this organization to October 26, 1913.

Reenlisting Nov. 13, 1913, he was furloughed to the reserve at Douglas, Arizona, as a Sergeant, Veterinary Corps, February 29, 1920, and was discharged to reenlist June 7, 1920. He served with the Medical Department as a Staff Sergeant at Letterman General Hospital until July, 1924, and in the 11th Medical Regiment, Hawaiian Department, to March 15, 1926. He then served a three-year enlistment in the Quartermaster Corps, and reenlisting for the Air Corps on August 29, 1929, his service in that arm was continuous until the date of his retirement. He served at March Field, Calif., until his discharge from the 64th Service Squadron, August 18, 1932; reenlisted the following day, was transferred to Hamilton Field, Calif., with the 7th Bombardment Group, and served until his discharge from the 69th Service Squadron, August 18, 1935; reenlisted the following day, was transferred to the 70th Service Squadron, May 14, 1936, and served continuously with that organization as a Staff Sergeant.

His record was excellent, and he was congratulated by the Commanding Officer of Hamilton Field, upon the completion of a highly successful career. The good wishes of the entire command of Hamilton Field were extended to Sergeant Cremers upon his well deserved retirement.

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TC-11 AIRSHIP FLIES OVER KENTUCKY WAR MANEUVERS

CaptainsGeorge C. Cressey abd Gerald G. Johnston, pilots, made a flight recently in the TC-11 airship to Fort Knox, Ky., during the last few days of the Second Army Maneuvers in that region. Leaving Scott Field, Ill., at dawn, Capt. Cressey piloted the airship to the vicinity of Fort Knox by early afternoon. He cruised around an hour looking down upon the highways massed with Second Army trucks and marching troops. Thousands of trucks and automobiles of all kinds were moving at a 20-mile-per-hour pace despite traffic conditions.

There were ambulances, cargo trucks, kitchen trucks, passenger trucks, photo trucks, reconnaissance and staff cars, gun carriages and limbers, ammunition trucks and motorcycles, also anti-aircraft guns and huge searchlights, machine guns, 37 mm. cannons and shoulder rifles. There were foot soldiers, motorized cavalry, tanks, airplanes and motorized units of all kinds. The Second Army had the appearance of an army advancing in real warfare.

Captain Cressey flew the airship over the new gold depository just completed at Fort Knox, into which billions of dollars worth of gold bullion is now being placed for storage under the watchful eyes of the Army.

All small brooks and streams were dry washes, and the Ohio and Wabash Rivers were lower than they had been for years. Despite this dryness, crops appeared to be in fair condition in the basins drained by these two rivers.

Each town or hamlet passed over had the appearance of prosperity if the number of automobiles lining the curbs was any criterion. And the majority of farmyards seemed to be brightened up with a new W.P.A. type of building, all of which were strangely similar in construction.

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Major Wolcott P. Hayes, Air Corps, has been relieved from assignment and duty at Kelly Field, Texas, and assigned to Headquarters, 4th Corps Area, Atlanta, Ga. First Lieut. Burton M. Hovey is assigned to duty at Kelly Field upon the completion of his tour of foreign service.

BOMBING AT SEA BY THE 7TH BOMBARDMENT GROUP

The 7th Bombardment Group, Hamilton Field, Calif., recently conducted a Group interception mission of a ship at sea, the ship intercepted being the U.S. Army Transport MEIGS.

The MEIGS position reports, as well as those of other ships, were plotted from data received over the teletype with the weather reports. From the plottings, the MEIGS plot showed she would be at a good position on the morning of July 17th for an interception problem.

A war condition was assumed, and the MEIGS represented an enemy fleet approaching our shores. The data received was supposedly transmitted by a friendly merchantman, a submarine and an observation airplane.

At 8:30 a.m., July 17th, the Commanding Officer of the 7th Bombardment Group ordered an airplane from the 88th Observation Squadron (LRA) to take off and definitely locate the MEIGS. The airplane from the 88th Squadron represented the whole squadron.

At 9:30 a.m., the Group Commander ordered the Group to take off and intercept the MEIGS. At the time of leaving the Golden Gate, the MEIGS was 186 miles out.

The Group echeloned to the right and left of the navigation airplane and guided on it at all times except when the Navigator was taking a double drift.

THE MEIGS was intercepted an hour and seven minutes after the Group left the Golden Gate. Smoke bombs and an aluminum "slick" were dropped from the Group Commander's airplane about a mile to the rear of the ship, and the rest of the Group used these marks as reference points for bombing. One 100# practice bomb was dropped from each airplane. The Group then returned to Hamilton Field.

Every safety precaution possible was used. All airplanes were carefully checked for life-preservers, water, etc., before the take-off. Three amphibians were to be used for rescue airplanes if need be. One amphibian airplane took off with the Group and flew out one hundred miles on the course followed by the Group. When the message that the MEIGS had been intercepted was received at Hamilton Field, the other two amphibians took off and started on the reciprocal course, followed by the Group on the way home. Position reports were sent back to the plotting room every fifteen minutes by the Group Commander and by the Navigators in the amphibians, times being staggered. These were immediately plotted and consequently, in the event of a forced landing, the distance and course of a rescue airplane from one forced down could be immediately determined. Two airplanes in each squadron were also designated as guard airplanes. These were to circle the airplane forced down to determine if life preservers, etc., were needed and were to act as guides for helping vessels or rescue airplanes.

It is planned for the 7th Bombardment Group to fly one of these interception missions at least once each month.

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FAST NON-STOP FORMATION FLIGHT

In seven hours, five Northrop Attack airplanes from March Field, Calif., completed the trip from their home base to Kelly Field, San Antonio, Texas, after having made what is purported to be the longest military non-stop formation flight on record.

The planes, with Major Louie C. Mallory as leader, started off at 7:00 a.m. and landed at destination at 3:00 p.m. (P.S.T.) According to estimates made at March Field, the average speed for the trip was 143.4 miles per hour.

The flight, which was made on August 21st, was designed to test gasoline and oil consumption in the new Attack planes recently assigned to the 73rd Attack Squadron.

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NEW FRENCH BOMBING AIRPLANE

The latest Bombing airplane built for the French government is the Amiot 144, which is characterized by high power and high precision in bombing; great precision in defensive fire by means of automatic defensive arms; fast performance and a long flight radius.

This airplane is designed to transport from 2,200 to 4,400 lbs. of bombs and to be able to traverse a distance of 2,480 miles at a cruising speed of 186.3 miles per hour. The crew consists of pilot, navigator and bombardier, and two or three machine-gunner observers.

The overall length of the plane is 58.2 feet; total wing span, 76.8 feet; height, landing gear down, 16.3 feet; landing gear up, 15.1 ft.; wing surface, 978 sq. ft.; dead weight, 12,760 lbs.; weight of fuel, from 2,860 to 6,600 lbs.; total weight of plane (normal) 19,800 lbs.; maximum total weight, 25,300 lbs.; maximum speed at 13,120 feet, 241.8 m.p.h.; maximum speed at 19,860 feet, 223 m.p.h.; landing speed, 55.8 m.p.h.; run at take-off, 640 feet; run at landing, 800 feet; time to climb to 13,120 feet, 10 minutes; time to climb to 18,860 feet, 17 minutes; ceiling, 32,800 feet; maximum flight radius, 2,356 miles. This flight performance is calculated on the utilization of two 1200 h.p. engines.

Powered with two 800 h.p. engines, the maximum speed at 13,120 feet is 217 m.p.h.; at 19,860 feet, 201 m.p.h.; run at take off, 800 feet; landing speed and run at landing, same as above; time to climb to 13,120 and 18,860 feet, 13 and 32 minutes, respectively.; ceiling, 27,880 feet, and maximum flight radius, 2,480 miles. By a variation of the curved profile of the wings, the lift coefficient passes from 125 to 170. The landing speed is also reduced by 15.5 m.p.h. The variation of the profile is mechanically affected by the ailerons, which can be deflected downwards some 20 degrees along the whole length of the trailing edge of the wing. These comprise the ailerons used for warping the plane and the special ailerons between them and the fuselage.

AIR CORPS NEWS LETTER

ISSUED BY THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT WASHINGTON, D. C.

THE NATIONS SHIELD "

VOL. XIX SEPTEMBER 15, 1936 NO. 18

VOL. XIX **Air Corps News Letter** NO. 18

Information Division
Air Corps
September 15, 1936
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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AERONAUTICAL EXHIBIT AT GREAT LAKES EXPOSITION

By the Wright Field Correspondent

In 1796, General Cleveland's surveying party cut through the virgin forest in Ohio, where forty years later the settlers laid the foundation for the great city of Cleveland. Little did they realize that the vast area would in later years swarm with air-minded men who would welcome airplanes from all nations to one of the finest and largest airports in the world.

One hundred years after it was founded, this progressive city invited the States bordering on the Great Lakes, namely, New York, Pennsylvania, Ohio, Indiana, Michigan, Illinois, Wisconsin, Minnesota, and also the Dominion of Canada, to join in an exposition to celebrate the progress made during the past century. By joint resolution the Congress of the United States established a Commission, composed of the Secretary of State, the Secretary of Agriculture, and the Secretary of Commerce, to represent the United States Government in this Great Lakes Exposition. Under this Commission was created a Commissioner General for its administrator.

The progress in the field of aeronautics was to be included under the direction of the War Department. Exhibits were to be displayed by the Air Corps, the National Advisory Committee for Aeronautics, the Bureau of Air Commerce, the Navy Department and the Smithsonian Institute, in the Government section of the Hall of Progress.

The preparation and installation of exhibits were assigned to the Materiel Division by the Chief of the Air Corps, and the exhibits were arranged by personnel under the direction of Brigadier General A.W. Robins, Chief of Division.

We enter the Great Lakes Exposition through the main entrance on St. Clair Avenue, identified by its towering and impressive pylons. Here we pass through a section devoted to art, culture, education, and music. Then over the "Court of the Presidents," honoring the sixteen Presidents either born or elected from a Great Lakes State. Over this bridge which breathes the historic atmosphere of old medieval days, we enter Marine Plaza, a broad landscaped avenue which leads north to the lake. The vast automotive building with its exhibits of the greater automotive industries is on the right. Nearer the lake is the Hall of Progress, a building in ultra-modern style of architecture, having no windows and ventilated by an unusual system of louvers.

In this huge and brightly colored structure is housed the United States government exhibit. We pass through the Erie side entrance and here in the spacious lobby of the Government section is the aeronautical display. The floor is inlaid with black composition tile, and around the edge of the lobby is a six-foot platform covered with a royal blue carpet which harmonizes with the blue gray walls. At the edge of the platform is a chromium rail which adds greatly to the artistic effect. The display cases have bases of finely finished walnut with plate glass tops.

The Air Corps exhibit is made up of specially selected items representing the very latest as well as some of the very earliest types of equipment used by the Air Corps. These items are arranged in groups to illustrate the progress made in various phases of military aeronautical development, viz: aerial photography, aerial navigation, aircraft bombs and machine guns, aircraft engines, propellers, wheels, and brake mechanisms, airplane and airdrome lighting equipment, aviator clothing and parachutes, several models of modern military airplanes, and two fully equipped Pursuit type airplanes.

The aircraft engine exhibit in particular includes four modern representative types of engines - Curtiss "Conqueror" V-1570-57 liquid-cooled, vee engine; the Pratt and Whitney "Hornet" R-1690-11, single row air-cooled radial engine; Pratt and Whitney "Twin Wasp" R-1535-7, two row air-cooled radial engine; and the Wright "Cyclone" R-1820-25 single row radial engine. Two sectionalized operative engines, the wartime Gnome Monosouppe rotorary radial and the Wright J-5 static radial, of the type used by Lindbergh in his famous trans-Atlantic flight, are also on display. The latter engine is equipped with a mechanical synchronizer and machine gun arranged to fire through the propeller. A small electric lamp lights to indicate the bullet leaving the muzzle.

Perhaps the most interesting of all the Air Corps exhibits is the diorama showing the Army system of instrument (blind) landing. This display is cleverly designed to show the actual landing of an airplane solely by the use of instruments and radio aids at an airport hidden by dense clouds representing fog, the path of approach and glide to the ground being realistically portrayed by a small model airplane in simulated flight. In this system the pilot employs a radio compass, an artificial horizon, and a directional gyro in conjunction with a marker beacon flasher on the instrument board to pick up the electric magnetic beams of two ground guiding stations in negotiating a "blind" landing without recourse to visual outside aid.

Another display of unusual interest is the Wright Brothers' propeller from the first United States Government airplane. This propeller, which was presented by General Foulois, is exhibited in the same case with the latest type of controllable pitch all-metal propeller now used on service aircraft.

The Air Corps exhibit includes two fully equipped modern service type airplanes, a single-seater Boeing P-26A Pursuit and a two-seater Consolidated PB-2A Pursuit. The latter airplane is equipped with a supercharged prestone-cooled engine and retractable landing gear. A special platform was erected to permit a close inspection of the cockpit of this airplane by the visiting public.

The principal item of interest in the exhibit furnished by the Bureau of Air Commerce, Department of Commerce, is a 36-inch rotating beacon of 1,500,000 candle power, the type used in the vast network of lighted commercial airways throughout the United States. This beacon was arranged to light and rotate by means of an electric eye whenever the control beam was intercepted by the hand of an interested visitor.

The Bureau of Aeronautics, Navy Department, exhibited a very interesting collection of enlarged photographs of several history-making and service type aircraft used in the carrier and patrol services.

The Smithsonian Institute, United States National Museum, provided a most interesting model display of early airplanes. This was flanked on either side by pictorial panels depicting natural flight and man's earliest conceptions of the flying art.

Up to the first of September, nearly two and one-half million people had visited the Exposition.

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Six Reserve officers recently completed two weeks' active duty at Selfridge Field, Mich., viz: Major F.M. Showalter, Captains L.E. Arnold, Arthur J. Davis, Lieuts. R.B. Kent, M.B. Skinner and J.F. Strickler, Jr.

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The annual Mitchel Trophy Race will be held at Selfridge Field, Mt. Clemens, Mich., on October 17th next. Committees to take charge of various features connected with this affair have been appointed, headed by Major Cornelius J. Kenney, General Chairman.

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AIR MINDED CITIZENS OF THE NORTHWEST

The 11th Bombardment Squadron recently returned to its home station, Hamilton Field, Calif., following the completion of its "Montana Flight." This flight took in the northwestern portion of the 1st Wing Area and, in addition to the airport and facility information obtained, there was evident throughout the entire flight a general air-mindedness of the people of the several States visited. The News Letter Correspondent states that it was extremely gratifying to encounter general good will towards the Air Corps as a whole.

The Governor of the State of Montana, Hon. Elmer Holt, and the people of that State outdid themselves in making the entire squadron feel welcome and in rendering assistance in every way possible. A banquet was given the squadron by Governor Holt and the Chamber of Commerce of Helena, Montana, which will be long remembered by all those fortunate enough to attend.

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RETIREMENT OF WARRANT OFFICERS

Three of the older and experienced Warrant Officers assigned to the Army Air Corps will be placed on the retired list within the next few months.

Warrant OfficersEugene Braig, of Langley Field, Va., will be retired in November; Michael J. Hurley, of Wright Field, Ohio, in December, and Herbert G. Knight, of Selfridge Field, Mich., in January.

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Special Orders of the War Department recently issued announce the promotion of Captain (temporary Major) Edwin J. House to the permanent rank of Major, Air Corps, to date from September 1, 1936, and the appointment of Captain Bushrod Hoppin, Air Corps, to the temporary rank of Major from August 26, 1936.

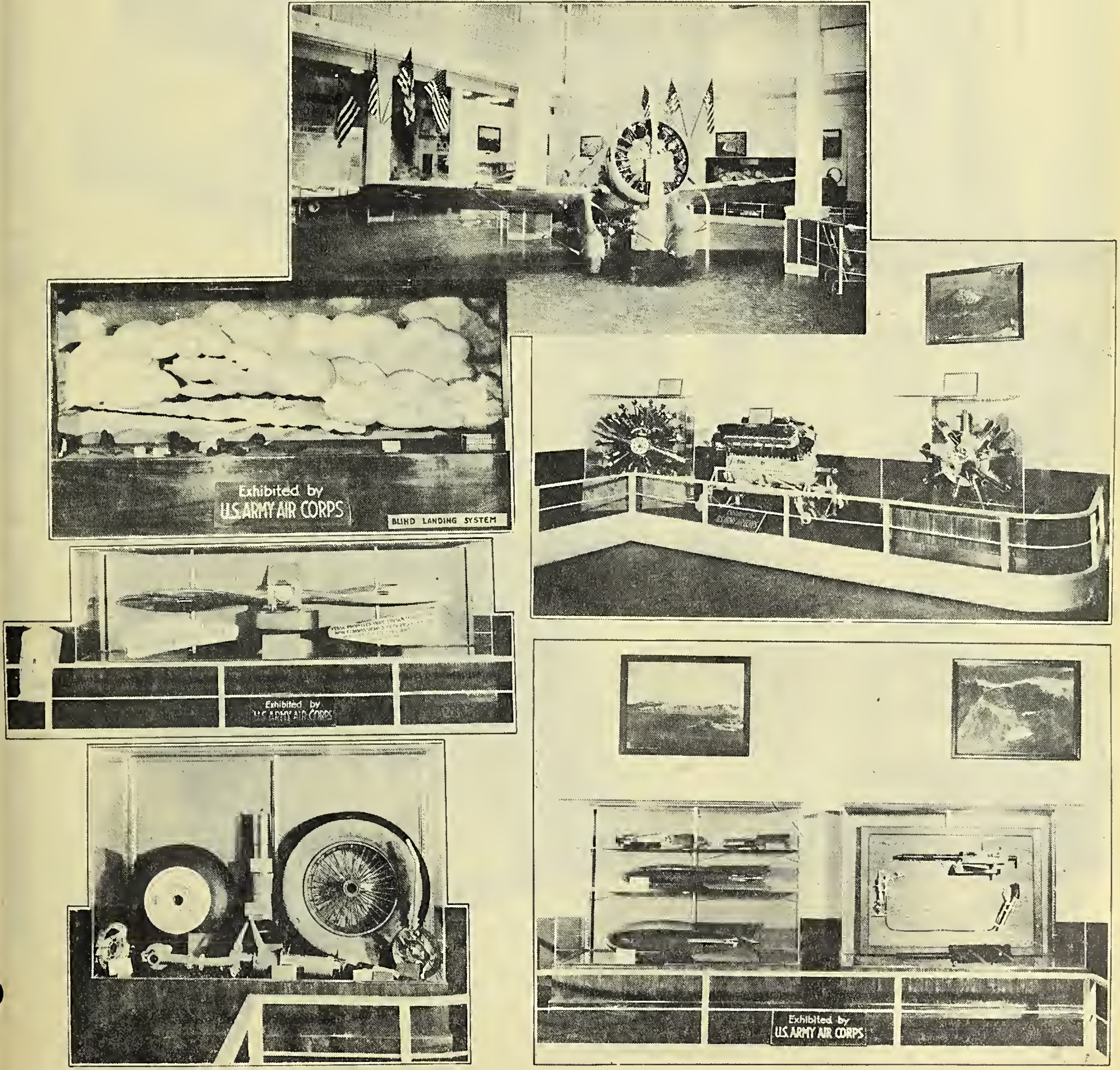
Colonel Clarence L. Tinker, Air Corps, at present commanding the 7th Bombardment Group, Hamilton Field, San Rafael, Calif., is under orders to proceed to Washington, D.C., effective December 17th next, and report for duty in the National Guard Bureau.

AERONAUTICAL EXHIBIT

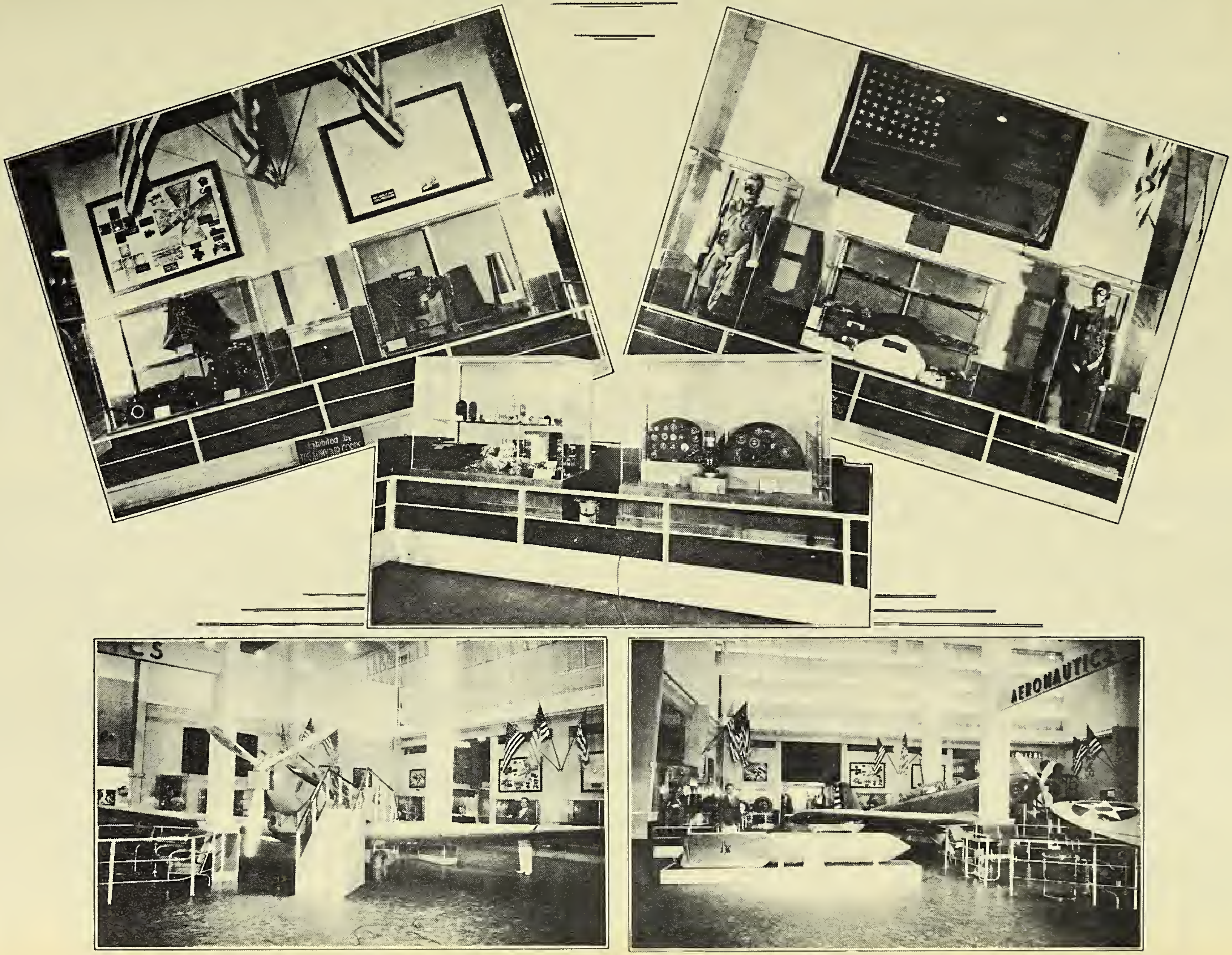
AT

THE GREAT LAKES EXPOSITION CLEVELAND, OHIO.

1936



AERONAUTICAL EXHIBIT AT GREAT LAKES EXPOSITION CLEVELAND, OHIO.



EXTENDED INSPECTION TRIP BY THE CHIEF OF THE AIR CORPS

AWAY from his desk for over a month, Major General Oscar Westover, Chief of the Air Corps, returned to Washington on the afternoon of August 27th, following the completion of a tour of inspection which embraced practically every Air Corps station in the continental limits of the United States.

General Westover made the trip to the West Coast along the northern route by rail and returned along the southern route by air, ferrying homeward his new A-17 Attack plane which he obtained from the Northrop aircraft factory at Inglewood, Calif. He was accompanied on the flight by Staff Sergeant Samuel Hymes, of Bolling Field, who had previously been ordered to the Northrop plant to receive instruction on the operation and maintenance of this new type airplane.

During the course of his inspection trip, General Westover visited and inspected some of the foremost aircraft factories in the United States - the plants of the Bell Aircraft Corporation and the Curtiss Aeroplane and Motor Co. at Buffalo, New York; the Boeing Aircraft Company at Seattle, Wash.; the Lockheed Aircraft Corporation at Burbank, Calif.; the North American Co. and the Northrop Corporation at Inglewood, Calif.; the Douglas Aircraft Co. at Santa Monica, Calif., and the Consolidated Aircraft Co. at Glendale, Calif. He also inspected a number of proposed airport sites.

Leaving Washington on the evening of July 24th, General Westover arrived in Chicago on the evening of July 27th, making stops at Buffalo, N.Y., and Cleveland, Ohio. At the latter city he visited the Great Lakes Exposition grounds, where he was most pleased with the Air Corps Exhibit. At Chicago, he called at the Headquarters of the 6th Corps Area and conferred with the Commanding General, Major General Charles E. Kilbourne. Later, he inspected the office of the Air Corps Procurement Planning Representative.

At Omaha, Neb., on July 28th, General Westover had a conference at the Headquarters of the 7th Corps Area, and was a guest of the Chamber of Commerce at luncheon, during which he gave a short talk. In the afternoon he visited Fort Crook and Offutt Field.

On July 30th, at Cheyenne, Wyo., he visited the airport, conferred with the manager thereof, and inspected the hangar and maintenance shops. Later he called on Brigadier General Charles F. Humphrey, Jr., commanding Fort Francis E. Warren.

After inspecting the Ordnance Depot at Ogden, Utah, and an airport site, General Westover proceeded to Salt Lake City, where he inspected the airport. Arriving at Spokane, Wash., on August 2nd, he met Colonel Clarence L. Tinker, Commanding Officer of Hamilton Field, Calif., and other members of his command, who had made a flight to that city. Following a visit to the Spokane Airport and a conference with the officer in charge, he departed for Seattle, Wash., and arrived there on the morning of August 3rd. At the Boeing Airport he conferred with Major John H. Gardner, in charge of Organized Reserves in that area. The latter stated that he had under him 38 active Reserve pilots, about half of which number are commercial airline pilots. Then followed a visit to the Boeing Aircraft Co. plant and a conference for several hours with officials of this company.

On August 4th, General Westover made trips to Port Townsend and Port Angeles, Wash., and the following day, upon his arrival at Tacoma, Wash., he had a conference with Brigadier General Casper H. Conrad, Jr., commanding Fort Lewis. Later he conferred with Major Floyd E. Galloway, Air Corps, commanding the 91st Observation Squadron at Fort Lewis, gave a talk to the officers under his command and inspected the lay-out of the flying field. He next visited the Tacoma Airport.

During the next four days, August 6th to 9th, inclusive, General Westover divided his time between Vancouver Barracks and Portland. He had a conference at the office of the Spruce Production Corporation; inspected Spruce Production Corporation properties; made official calls on the Commanding General and the Finance Officer at Vancouver Barracks, and inspected Pearson Field, the Air Corps landing field at that post.

Enroute to San Francisco on August 10th, he made a stop at Sacramento, Calif., to confer with the Construction Quartermaster and officials of the Chamber of Commerce. On August 11th, after calling at the Headquarters of the 9th Corps Area at the Presidio of San Francisco, and meeting Colonel Henry B. Clagett, on temporary duty there as Air Officer, he proceeded to Moffett Field, Sunnyvale, Calif., inspected that station and the Reserve training activities thereat. In the afternoon he inspected the Oakland Airport. On the following day, accompanied by Colonel Clagett, he visited Hamilton Field, San Rafael, Calif.; conferred with the Commanding Officer, Col. C.L. Tinker; inspected the post and quarters, and then gave a talk to all the officers of the field. Later he had a conference for several hours with Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, who had just arrived by air from Washington. Returning to San Francisco in the afternoon, he called on the commander of the 9th Corps Area, Major General George S. Simonds.

Arriving at Los Angeles on the morning of August 13th, General Westover spent several days in that city and its vicinity inspecting aircraft factories. After receiving instructions regarding certain instruments in the A-17, the Army's new Attack plane, he made a 40-minute flight with Captain Edward M. Robbins, Air Corps representative at the Northrop plant, as passenger, and expressed himself as much pleased with its "handling" qualities. Shortly afterwards, he flew a BT-9, equipped with a "Wasp" engine. General Westover was enthusiastic regarding the performance of this basic training plane, finding it delightful to fly, easy to climb and easy to land. Flying for about half an hour, he maneuvered it freely in tight circles and spirals, steep wing-overs, steep dives and climbs. He characterized it as a good, speedy, all-purpose training plane.

Taking off with Sergeant Hymes in the A-17 on the morning of August 17th, General Westover landed at March Field, Riverside, Calif., after a 40-minute flight; had a conference with Brigadier Generals Delos C. Emmons, Gerald C. Brant and Colonel John H. Pirie; addressed the officers of the post and inspected the general lay-out of the field.

On the following day, after a 40-minute flight from March Field, he landed at Long Beach, Calif., and after a brief inspection departed for San Diego, landing at Lindbergh Field. After inspecting the plant of the Consolidated Aircraft Corporation, he proceeded to Rockwell Field, inspected the Rockwell Air Depot and then called on Naval officers at that field.

At 8:45 a.m., August 19th, General Westover started on his eastward flight. Just prior to that time he gave a talk to the officers of the Rockwell Air Depot. Going up through a low ceiling, he found clear conditions to Tucson, Arizona, where he arrived at 11:15 a.m. After a brief delay, during which Sergeant Hymes checked the oil consumption, the General departed at 1:20 p.m., Mountain Time, for El Paso, Texas, dodging thunder storms enroute, and arrived at 3:10 p.m. Here he conferred with Major William L. Boyd, Air Corps, on duty at Biggs Field.

Taking off from Biggs Field on the morning of August 20th, at 6:10 Mountain Time, General Westover climbed to an altitude of 15,000 feet and headed for Randolph Field, Texas, where he arrived at 10:40 a.m., Central Time. After inspecting the Primary and Basic Stages of the Primary Flying School, and the School of Aviation Medicine, he flew to the San Antonio Air Depot at Duncan Field and inspected all the activities thereat. He then returned to Randolph Field. That night he was an interested spectator of the night flying operations at the Primary School.

Motoring to Kelly Field early the following morning, General Westover gave a talk to all the officers and then made an inspection of the post, accompanied by General James E. Chaney, Colonels Arnold N. Krogstad and Roy M. Jones. Arriving at Brooks Field, Texas, at 10:40 a.m., he inspected the Station Complement, barracks, etc., and found conditions excellent. He next inspected the post in general, and at noon called at the Headquarters of the 8th Corps Area at Fort Sam Houston. Following his return to Randolph Field, he talked to all the officers of the field for about half an hour and then conferred with General Chaney, Colonel Henry W. Harms and Major Auby C. Strickland on training policies.

On August 22nd, after reviewing the cadet battalion at Randolph Field, inspecting the cadet companies, barracks, mess, supply, and recreation facilities, the 67th Service Squadron, the 47th School Squadron, engineering shops, ground school hangar and assembly hangar, General Westover took off at 12:10 p.m. for Fort Sill, Okla., arrived there at 2:35 p.m.; inspected that post; left for Hensley Field, Dallas, Texas; arrived there at 5:00 p.m., and made an inspection. On the following day at 9:05 a.m., he took off for Shreveport, La.; landed at Barksdale Field at 10:55 a.m.; inspected the post in company with Lieut. Colonels Millard F. Harmon and Earl L. Naiden, and took off at 11:55 a.m. for Maxwell Field, Ala. Flying through rainy weather and dodging several thunder storms, he arrived at Maxwell Field at 2:55 p.m., and was met by Colonel Arthur G. Fisher, Commanding Officer, and Capt. Ray L. Owens.

Following an inspection of the gunnery camp at Valparaiso, Fla., the next day; proceeding to Fort Benning, Ga., and inspecting the flying field, the new hangar and other facilities, also the administration building and the school building of the Infantry School, General Westover took off for Atlanta, Ga., at 5:35 p.m. Early the next morning he took off for Miami, Fla., and, after a 4-hour flight, landed at the Navy field, finding, after circling the Municipal Field, that it contained various obstructions incident to repair work thereon. Completing the inspection of Chapman Field, Miami, he returned to Atlanta, after a flight of 3 hours and 50 minutes, and called on Major General George Van Horn Moseley, commander of the 4th Corps Area. The next day, in company with General Moseley, he inspected Candler Field, and at 3:00 p.m. took off for Pope Field, Fort Bragg, N.C., where he inspected Flight C of the 16th Observation Squadron, the lighter-than-air hangar and the officers' quarters.

The last day of General Westover's inspection tour was probably the busiest one of his entire trip. After inspecting the lighter-than-air activities at Pope Field, the balloon hangar and barracks, and viewing the entire Fort Bragg Reservation in company with Brigadier General Manus McCloskey, the post commander, he took off at 8:45 a.m., for Langley Field, Va., and arrived there in one hour and 35 minutes. He was met by General Frank M. Andrews, Commanding General of the GHQ Air Force; Colonel Walter R. Weaver, and all officers of the Base Force. After a conference with officers of the Air Force Staff, with whom there were at that time present Lieut. Colonels Oliver P. Echols from the Materiel Division and Gerald E. Brower, from the Office of the Chief of the Air Corps, he took off at 1:15 p.m. for Bolling Field and made the trip in 55 minutes, landing at 2:10 p.m.

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RESERVE TRAINING ACTIVITIES AT LONG BEACH, CALIF.

The Air Corps Detachment stationed at the Municipal Airport at Long Beach, Calif., concluded in July one of the most unusual months. On the tenth of that month, Captain Pardoe Martin, Air Corps, reported for duty from Washington, D.C., relieving Captain John K. Nissley, Air Corps, who was in command of the station for the past four years and who was ordered to duty as a student at the Air Corps Tactical School at Maxwell Field, Montgomery, Ala.

Upon assuming command, Captain Martin found himself very busy making preparation for the Summer Training Camp, which opened on July 19th. Of the nine airplanes available at the airport, eight were PT-3A's and one an O-19B. These were augmented by one O-19B and two PT-3's from the Air Corps Detachment at Lindbergh Field, San Diego. The camp opened with one Medical Reserve Flight Surgeon, 43 Air Corps Reserve officers assigned to the 479th Pursuit Squadron, and 10 Air Corps Reserve officers assigned to the 514th Observation Squadron, all of them reporting for 14 days' active duty. First Lieut. Walter W. Gross, Air Corps, Unit Instructor for the 514th Observation Squadron, was ordered to Long Beach for temporary duty to assist Captain Martin in carrying out this training.

Due to the large number of officers reporting for this training and the shortage of equipment, the officers were organized into a Composite Group consisting of two squadrons, "A" and "B", of two flights each. Intensive training was carried out by the squadrons, consisting of Observation, Bombardment, Attack and Pursuit missions, in addition to ground school and various duties each officer was assigned to perform.

Luncheon was served on July 23rd, in honor of Colonel Halsey E. Yates, Infantry, Executive Officer, First Reserve District, in charge of all the Reserves in Southern California, in the Officers' Club, which was attended by the Mayor of the City of Long Beach, the entire City Council and the Aviation Commission.

On July 25th, Squadron "A" performed a cross-country mission to San Diego and return, landing at Lindbergh Field and visiting the San Diego Fair. On July 26th, Squadron "B" performed the same mission. The entire day of July 31st was devoted to Chemical Warfare training, which was given by the Chemical Warfare Officer, 63rd Coast Artillery, from Fort MacArthur.

On the evening of the 31st, a "Washout Dance" was given in the Officers' Club at the Army Air Base, which was attended by the officers in camp and their families, the honor guests being the newly appointed Unit Instructor, Captain Pardoe Martin, and Mrs. Martin.

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FOREIGN OFFICERS INSPECT SELFRIDGE FIELD

During August, Selfridge Field, the station of the 1st Pursuit Group, was visited by two prominent foreign officers. A brief official visit was paid by Lieutenant General Frederich von Boettinger of the German Army, Military and Air Attache stationed in Washington. After an inspection of post activities, the General was guest of honor at a luncheon at the Officers' Club, at which Colonel Royce and his staff were present.

Commandant Norbert Champsaur, the French Attache for Air, visited Selfridge Field enroute to the Second Army Maneuvers as an official observer. He also inspected the post. Both officers expressed enthusiasm over the appearance of the post and its equipment.

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According to the latest issue of the Air Commerce Bulletin, published by the Bureau of Air Commerce, Department of Commerce, there were in the United States, as of August 1, 1936, 750 municipal Airports, 495 commercial airports, 289 Department of Commerce intermediate fields, 63 Army airdromes, 26 Naval air stations (including Marine and Coast Guard), 43 State-operated fields, 651 marked auxiliary fields, 64 private fields, and 25 fields for miscellaneous government activities, total 2,406.

Airports and landing fields having any night-lighting equipment numbered 699, viz: Municipal, 252; Commercial, 96; Intermediate, 279; Army, 31; Navy, 13; State, 9; Auxiliary, 10; private, 9.

REOPENING OF SCHOOL TERM AT AIR CORPS TECHNICAL SCHOOL

On August 31st, the Air Corps Technical School at Chanute Field, Rantoul, Ill., reopened after the prescribed summer vacation during the months of July and August.

During the vacation period, the Department of Mechanics was the scene of intense activities for School personnel. Buildings were repainted inside and out; new class rooms and offices were arranged, and the school equipment in general was given a complete overhauling. This period was also utilized by divisional chiefs and instructors in revising and bringing up to date all texts and pamphlets in order to afford the incoming students the latest technical information in each particular subject.

The Chief Instructor, Mr. C.J. Moors, and Senior Instructors, Messrs. W.E. Browning (Airplanes) and W.H. Jackson (Engines), spent ten days each at Wright Field, Dayton, Ohio, during August, for the purpose of familiarizing themselves with the latest engineering developments.

Mr. C.O. Hobson, Instructor in the Instrument Branch, has just completed a special course of instruction on the Automatic Pilot and, after visiting the Sperry Pioneer and Kolsman factories, is prepared to instruct in the latest developments on the subject of Instruments.

Under the new schedules which became effective with the reopening of school on August 31st, the Department of Mechanics will conduct the following courses for enlisted men for the duration specified:

Airplane Mechanics - forty weeks.

Aircraft Machinists - twenty-eight weeks.

Aircraft Welders and Sheet Metal Workers, - thirty-two weeks.

Parachute Riggers - eight weeks.

In addition, a course for officers in the subject of Airplane Maintenance - Engineering, which is a composite of all courses given enlisted men, is conducted annually and is of ten months' duration.

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BOMBING TESTS BY 7TH BOMBARDMENT GROUP AT MUROC, CALIF.

Eighteen planes of the 7th Bombardment Group, under the command of Lieut.Col. C. L. Tinker, left their home station, Hamilton Field, Calif., on August 19th, and arrived at March Field three hours later. There, the 19th Group was consolidated into the 32nd Bombardment Squadron and attached to the 7th Group to form one unit of three 9-plane squadrons.

The 7th Bombardment Group then conducted exhaustive tests of different methods of bombing an oblong target, etched on the alkali bed of Muroc Dry Lake, August 19th - 22nd. These tests were the first to be conducted under the new Wing Commander, Brigadier-General Delos C. Emmons.

The first mission, on August 20th, was merely introductory to familiarize bombers with the target, terrain, and their own bomb sights. During this mission, individual bombing was conducted by flight and squadron leaders.

That afternoon, bombs were dropped individually in squadron salvo, all sighting being conducted by the leading plane. Airplanes were in a stepped-down javelin formation, the wing men of the center element spaced out to give an oval pattern. In this phase nine bombs were dropped on each run. The first mission on the following day was similar to the one above, except that three bombs were dropped in train from each airplane, giving 27 bombs with a larger pattern. Simulated bombing of a moving target was conducted on the afternoon of August 21st and on the morning of the 22nd. Three trucks at 150 feet intervals represented a target moving at thirty knots. Sighting was done on this target both individually and by flights, with the trucks moving on both sinuous and irregular courses. Each bombardier then "called" his shot, taking into consideration all possible sources of error.

It is noteworthy that the tests were conducted under as bad conditions as would ever be encountered. The target was as small (300 by 30 ft.) as bombardment probably would ever be called on to destroy, and it was difficult to spot on the glaring desert. Bombs were dropped from 12,000 feet above the target at the cruising speed of the B-12, a strong quartering tail wind prevailing at that altitude. In spite of this, the target was within the pattern of the bombs on every mission.

These tests proved that with electric dropping mechanism, it is no longer true that the bombs from the rear planes will fall in front of those dropped from the leading plane. The pattern from the stepped-down formation was almost exactly the same size as the formation itself, with the bombs in the same order and not reversing. Squadron bombardiers found it necessary to aim ahead of the center of the target, which brought the center of impact of all bombs close to the center of the target.

One sidelight of the trip should settle the photograph vs. plotting controversy. After each run, the hits were plotted by triangulation from the craters, and each run was photographed both obliquely from low altitudes and vertically from the Bombardment airplanes. However, results are not now known.

After a Wing dinner on Saturday night, August 22nd, the 7th Group left March

(Continued on Page 16).

NEW NINE-LENS AERIAL CAMERA

This nine-lens aerial camera was designed by the Coast and Geodetic Survey for increasing the accuracy and efficiency with which the photographing of charts can be accomplished. The camera takes nine separate photographs on one film, 23 inches wide. The nine negatives are later projected on to a single sheet of paper to form a composite photograph 35 inches square. These photographs replace from 6 to 20 photographs made with single cameras.

Although the camera was designed and built with funds allotted the Coast and Geodetic Survey, it is really a cooperative product. The Fairchild Aerial Camera Corporation constructed the camera, and the lenses and mirrors were tested by the National Bureau of Standards. The Air Corps will test the camera at Wright Field, and its value for military mapping purposes will be determined by the Engineer Detachment.

Scientifically, the camera is of interest in the use of special stainless steel mirrors which are secured to a cone of similar billet of metal. This metal was selected after numerous tests at the National Bureau of Standards.

The National Bureau of Standards wanted to obtain a suitable metal which would have a constant coefficient of thermal expansion, since all of the optical elements are secured to a single billet of metal.

It is so designed that the large range of temperatures encountered in aerial photography will not change the optical adjustments of the numerous parts. The 8 lenses are arranged symmetrically around the center lens. The sizes and focal lengths of all the lenses are identical so that they can register the images on a single sheet of film. The 8 outer lenses have their objects reflected through an angle of 38 degrees outward so that a total field of 130 degrees square is photographed by the camera. With the bombing airplane from which the photographs were taken it is possible to photograph an area of about 600 square miles in a single exposure.

Nearly two years have been required for the design and construction of the camera. Many new features entailed additional research in production methods as the construction was started. The camera is entirely automatic in operation. It has an automatic sight with a grid in the field of view, whose motion has been kept in step with the image on the ground. The image is driven through the sight. The series of grid lines are also driven by electric mechanism. The size of the film is 23 inches wide and 200 feet long, sufficient for one hundred exposures. The camera can be reloaded in the air, although one film is usually sufficient to photograph for four hours continuously.

The contract price for the camera is $24,350. That, of course, does not include the salaries of the men connected with the finishing work. An amount of $35,000 would be a conservative estimate for the camera and the finishing work in detail.

The weight of the camera is 305 pounds.

It is proposed by the Air Corps to equip a Martin Bomber with the camera.

Measurements correspond to the use of a steel tape instead of a yard stick, which takes care of a greater area, making only one measurement instead of twenty.

The type of lens used has been very carefully selected, although there are several types of lens that could be used. The ones used happen to be English. They have to be uniform.

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17TH ATTACKERS FLY NON-STOP TO KELLY

Streaking across the southern part of the United States like migratory swallows, five Attack planes from March Field, Riverside, Calif., flew to Kelly Field, San Antonio, Texas, on August 21st in seven hours and 45 minutes. According to the News Letter Correspondent, a new record for long distance non-stop flying for March Field was thus established. The five planes of the 73rd Attack Squadron, led by Major Louie C. Mallory, departed from March Field at 7:00 a.m. and landed at San Antonio at 2:45 p.m., Pacific Time. An average of 148.2 miles per hour was reported for the trip.

The pilots on this trip, in addition to Major Mallory, were Lieuts. Frederic C. Gray, Robert G. Polhemus, William Q.Q. Rankin and George H. Shafer. The mechanics were Sergeants Thomas J. Bullock, Richard Malone, Wilbur Booher and Corporal Thomas B. McIlhenny. The rear cockpit of Lieut. Polhemus' plane was empty until San Antonio was reached, but Lieut. David B. Kuhn, of the 73rd, occupied it on the return trip.

On their return from the gruelling test flight, the five pilots reported that they had experienced no unusual fatigue. In their words, it was just routine flying with no amusing incidents to brighten it up.

The Northrop Attack planes recently assigned to the Squadron on their arrival from the Inglewood factory were used in the flight. The pilots reported that the planes stood up satisfactorily. The return flight was made August 23rd, via El Paso, Texas.

The above supplements the item on this flight in the last issue of the News Letter and makes correction as to the duration of the flight and speed attained.

THE HURRICANE AT VALPARAISO, FLA.

An account of the hurricane which struck the Air Corps bombing and gunnery range at Valparaiso, Florida, and vicinity on the night of July 30-31, was recently submitted by Captain Arnold H. Rich, Air Corps, in command of this base. For over 24 hours the Air Corps radio station at the gunnery range was the only medium through which many civilians as well as army personnel could be informed as to the welfare of hundreds of visitors who were at the shore at that time.

In his report, Captain Rich states that frequent reports of a tropical disturbance centering west of Cedar Keys, Fla., and south of Apalachicola, Fla., were received on July 28th and 29th. No great concern was felt on those dates for the Valparaiso area. At about 11:00 a.m., on July 30th, reports were received which would indicate that the tropical disturbance was moving slowly to the northwest and was expected to strike between Pensacola and Apalachicola, Fla. Further reports were that the center should strike the coast about 8:00 p.m., in the vicinity of Pensacola. At noon that day, Col. Arthur G. Fisher, Commanding Officer of Maxwell Field, Ala., directed Captain Rich to proceed to Valparaiso and prepare the Bombing and Gunnery Base there for eventualitties. Piloted by 1st Lieut. Carl R. Storrie, Captain Rich arrived at Valparaiso about 3:00 p.m., and found weather conditions good at that time, but there was a gusty wind from the northeast and the barometer was falling slowly. Lieut. Storrie returned his airplane to Maxwell Field.

The noncommissioned officer staff on duty at the Bombing and Gunnery Base was assembled and instructions issued as to action to be taken. Due to a half-day schedule, some of the enlisted personnel were absent with permission, leaving a reduced force to prepare for the disturbance. Radio reports received at this time indicated that the storm was moving to the northwest and would strike in the Panama City-Pensacola area about midnight if its course remained unaltered.

Suitable details were organized for the evacuation of the personnel quartered in tents to permanent buildings and the preparation of permanent buildings for the worst. It was realized that the safety of the station personnel and any refugees would depend upon the survival of the barracks and the mess hall. Both of these buildings were new and of exceptionally strong construction. It was decided, however, that 2" x 6" bracings be placed at six-foot intervals along the sides and ends of the buildings, and a suitable detail commenced this work.

The supply section was instructed to assemble two rescue kits to be placed in four-wheel drive trucks. The kits were to be composed of the following: 1 aircraft rescue kit; one 2-man cross cut saw; two axes, two shovels, one crow bar, two jacks, two lanterns, two flashlights, ropes, chains, first aid packets, etc. Staff Sergeant Clifton P. Smith, N.C.O. in charge of transportation and supplies, was placed in charge of the rescue squads and equipment. A first aid station was established in the mess hall. During the period of preparation the intensity of the wind continued to increase and the barometer to fall.

It was noted that the detail reinforcing the buildings could not make the desired progress, so instructions were given to the detail on the tents to drop the center poles, anchoring the tents inside of the frames with the center poles and to secure all loose doors and corners, and upon completion of this to report to Master Sergeant Lunday who was in charge of preparing the buildings. At 5:00 p.m. the wind was from the northeast, 40 to 60 miles per hour. It was gusty and raining, making working conditions difficult.

Inspection of the boat house and boats was made. Corporal Nash, NCO in charge of boats, was given extra personnel and made all the necessary preparations. The rescue boats, P-9 and V-15, were anchored in the best protected bay, as were all privately owned water craft. Very little reinforcing could be done to the boat house. All small boats and equipment were secured.

It was decided not to evacuate the caretakers from White Point until later. However, they were evacuated about 12:00 midnight and brought to the field by one of the rescue squads, who found going very difficult due to the heavy rain, high winds and fallen trees.

By 8:00 p.m., all buildings had been braced to such extent as was possible with the available material and personnel. The barometer continued to fall. The wind rose to 50-70 miles per hour and it was raining very heavily. It was felt that an attempt to remove the canvas from the frames of the tents would prove futile and would endanger the lives of the personnel, as a few trees had blown down and electrical service was intermittent. All personnel were ordered into the mess hall and barracks, staff personnel excepted. Orders were issued that no personnel would leave the buildings except under orders. The cook prepared coffee and the majority of the enlisted men were given an opportunity to secure needed rest and dry clothing.

During the whole period, Radio Operator Private Bertrand D. Johnson had been on the alert and was contacting every possible source of information and transmitting reports on the conditions in the Valparaiso area. His task was extremely difficult, due to the intermittent electrical service, static, unsuitability of equipment and general weather conditions. The antenna pole and flag pole had been braced and weathered the high winds. One antenna, however, was blown down and had to be replaced. Radio Operator Johnson contacted Mr. J. Long, an amateur radio enthusiast and operator residing in Valparaiso. They cooperated in the transmission and receipt of information. Contact was maintained with Fort Barrancas and the Naval Station until they went off the air. No information could be received from the east, but all other reports indicated, at 12:00 midnight, that the center of the disturbance was moving on the Valparaiso-Fort Walton area. The wind was still from about ten degrees north of east and was estimated at from 60 to 80 miles per hour. At this time it was raining so hard that it was nearly impossible to see over 50 feet.

Frequent inspections were made of the camp area and the personnel turned out to remove fallen trees from buildings and electrical wires. Inspections were also made of the boat house and personnel evacuated from there, as the building was shaking and rocking badly. Inspection of the Valparaiso area and town was made as frequently as possible, so that aid could be rendered if found necessary.

At about 12:00 midnight, it was found that additional stripping would be required if the roofs and roofing were to be saved on the buildings. Necessary personnel were turned out. Private, 1st Class, Fred Hobbs, and Private Charles A. Winters volunteered to attempt to make repairs on the roofs, and materials were passed up to them. They accomplished repairs where necessary at great risk to themselves. At 2:00 a.m., it was readily seen that the center of the disturbance was very close. Repeated inspections indicated that the barracks and mess hall would stand a terrific wind, as no movement could be discovered. The headquarters building required further bracing at this time, as movement was being felt. All personnel, except Master Sergeant Lunday, Private, 1st Class, Milburn, and the radio operator, Private Johnson, were ordered into the barracks. Refugees present were the family of Master Sergeant Lunday and Mr. Knipper of the W.P.A.

At this time the electrical power supply failed, and Radio Operator Johnson was unable to receive. He continued, however, to broadcast on the half-hour. Inspection of quarters showed that most of the personnel were resting and no great apprehension felt on their part. At 4:00 a.m., the barometer began dropping very rapidly and the wind increased to 80-90 miles per hour. Shortly thereafter, the barometer dropped very sharply and the full force of the hurricane was on. Estimates placed the wind velocity in excess of 100 miles per hour. These estimates were later confirmed as being correct. All personnel remained under cover, except those making inspections and repairs. The velocity of the wind remained at approximately 100 miles per hour until 7:00 a.m., when it started to decrease, and by 8:00 a.m. a full lull was experienced. All personnel were turned out to make repairs in preparation for the counter blow.

The lull lasted until about 9:30 a.m., when the wind shifted to the south and it started raining. By 10:00 a.m., the wind was in the southwest and estimated at from 80 to 90 miles per hour. The counter blow was not as intense as the front area of the disturbance, and by 12:00 noon it was realized that the worst was over.

A 5:45 a.m., a survey was made in preparation for an attempt to remove to the field the family of Lieut. Hugh Fite who were vacationing at Postl's camp, 1½ miles to the east of the field and located on a very exposed point. This site was approachable only by a sand trail and through badly timbered country. The survey indicated that the road was blocked by fallen trees and that trees were continuing to fall. A rescue squad properly equipped proceeded to Postl's camp and arrived there about 6:30 a.m. at the height of the storm. Mrs. Fite, her three children, and five other civilians were evacuated. Lieut. Fite's family remained at the field and the civilians, at their own request, proceeded to Valparaiso, Fla. Fortunately, the force of the storm decreased shortly after the return trip was started, and by the time the field was reached a near calm existed. Staff Sergeant Smith, Private, 1st Class, Milburn and Private Ray were the enlisted men who volunteered to compose the rescue squad.

By 11:00 a.m., the counter blow was on in full force, and all personnel were directed to remain under cover, inspection personnel excepted. Inspection of the boat house showed it to be in good condition. The boats could only be seen in the distance, having been blown from their anchorage, and both appeared to be on shore. All privately owned boats, except one, were either ashore or sinking.

Valparaiso was inspected and no serious damage or injury discovered. At 12:00 noon, the worst of the storm was over, and the wind had subsided to about 40 miles per hour. The barometer was rising rapidly. At 1:00 p.m., all precautionary instructions as to personnel were removed. At 2:00 p.m., a rapid survey was made, and another at 5:00 p.m. Results were as follows: Rescue boat P-9 on shore; rescue boat V-15 afloat and undamaged; barracks, mess hall, latrine, garage, boat house and storage buildings were in good condition, except for minor damages to roofs. Tents and tent frames were blown from foundations and canvas damaged to an undetermined extent. All other equipment was in good condition, slight water damage excepted. At White Point, it was found that two new frames for buildings had been blown down; all other new construction was in good condition. All old construction was in good condition, roofs excepted. Repairs were commenced without delay and personnel moved back into proper quarters and tents.

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VALUABLE SERVICE BY MAXWELL FIELD RADIO PERSONNEL

For a day or two before July 30, 1936, newspaper readers of Alabama and Florida had been following a hurricane in the Gulf of Mexico. At about noon of that day it became certain that the storm would strike the shore in the vicinity of Maxwell Field's Bombing and Gunnery Base at Valparaiso, Florida.

Radio transmitting and receiving station WM-6 is operated at the Base for communication with Maxwell Field's Communications Section, Station BB-1.

Both of these stations went permanently "on the alert" at 1:00 p.m., July 30th, when it became obvious to the Commanding Officer of the Base that the hurricane was going to strike within the next few hours.

The center of the storm did not hit until about ten o'clock on the morning of July 31st. The center of the hurricane passed about over Valparaiso, levelling small wooden buildings, boat houses, tents and similar structures. All telephone and telegraph lines in the vicinity came down, and most of the roads were rendered impassable by debris.

Persons in and around Valparaiso soon learned that the only means available to contact any outside point was by utilizing the army radio station at the Bombing and Gunnery Base. Upon being advised of the situation, Colonel Arthur G. Fisher, Air Corps, Commanding Officer of Maxwell Field, authorized the transmission of messages connected with hurricane reports during the time while the commercial communication companies were not functioning in that vicinity.

Fortunately, no lives were lost or serious injuries sustained by persons on shore. It is understood that one or two small fishing boats caught out in the Bay and Gulf were lost with several persons aboard.

Naturally, great anxiety was felt by Alabama citizens and others having relatives and friends in the hurricane area, and many messages were received from the Base for addresses in Alabama and neighboring States. These messages were relayed by telephone to Montgomery, to the newspapers and to the commercial telegraph companies.

Both radio stations remained constantly on the alert and maintained communication until 4:00 p.m., Saturday, August 1st, at which time all messages had been cleared and there was no further necessity for emergency operation. It was notable that there was a period of only ten minutes during the emergency when the Base radio station was out of commission, due to power troubles. The Maxwell Field station operated throughout the period. Atmospherics caused great interference during a major part of the operation.

In a casual examination of the many messages handled it was interesting to note that one was relayed to Benzonia, Mich., and one to Xenia, Ohio. While no loss of life or injuries were involved, the mental relief afforded thousands of persons is incalculable.

The radio operators, Privates Bertram D. Johnson and George M. Belesky, remained at their post of duty with hardly any rest during the entire period of emergency operation. The radio set is located inside a small temporary wooden building, and they were constantly in danger of death or injury.during the blow.

Privates Foyl Beasley and Douglas D. Moore, both of the 51st Attack Squadron, Maxwell Field, likewise remained on duty equally conscientiously, although they were not exposed to danger from the elements.

A letter to the Commanding Officer of Maxwell Field from a Birmingham, Ala., attorney, who was at Valparaiso, Fla., on the night of the hurrican, commended most highly the services of Privates Johnson and Moore which proved of incalculable benefit to the many people in distress, and in conclusion stated: "As a citizen I am glad to know that men with such ability and devotion to duty are engaged in the public service.

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SELFRIDGE FIELD BECOMES LONESOME

"With the completion of the Second Army Maneuvers, Selfridge Field has the appearance of a partially deserted camp," says the News Letter Correspondent, and he then adds: "The 18 visiting Bombers from Langley and 9 Attack ships from Barksdale have departed, together with their attendant personnel, leaving us with pleasant memories of the association. Not only were the maneuvers valuable from our standpoint tactically, but we were happy to have had the opportunity to play host and renew acquaintances."

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WARRANT OFFICER HURLEY LEAVES WRIGHT FIELD

WRIGHT Field will lose one of the most valued members of its military staff in the retirement of Warrant Officer Michael J. Hurley, who is leaving the field shortly after more than 30 years of continued service.

Hurley has served continuously at the local field longer than any other person of military rank. As Warrany Officer he has acted as assistant to the Adjutant, in charge of individual military personnel records. Officers have come and officers have gone, but never has one not felt protection in Hurley's knowledge of the exceedingly intricate military regulations which form the law of military living. Always have they counted on Hurley's telling them what they could and could not do, confident of his interest and help in steering them through the proper procedures in proper manner.

When officers have traveled, post cards have streamed back for "Mike" Hurley, also sea food to satisfy his well-known weakness, if they went near the sea. Now that he is leaving, letters are arriving with "You can't leave, Mike. It won't seem the same place without you." Thus Hurley has proved that a kernel of humanity can soften the hardest and most abstract of regulatory shells.

Born in Peabody, Mass., Hurley had his education in Boston and Salem public schools. He enlisted in the Army in May, 1899, and was sent to join the 19th U.S. Infantry at Middletown, Pa., which was at that time mobilizing for the purpose of quelling the insurrection in the Philippine Islands. He left Middletown in July and entrained for San Francisco, sailing from that port in August.

Upon arrival in the Philippines, the regiment was assigned to the 8th Army Corps, commanded by General MacArthur, father of General Douglas MacArthur, former Chief of Staff. The regiment moved to the southern islands, but active campaigning was not begun until the rainy season had ended in November. The United States had come into possession of the Philippine Islands only in 1898, and campaigning there in guerilla warfare brought the American soldiers face to face with conditions they had never before known. Rations consisted partly of native foods to which they had to become accustomed. Sleeping was on the ground. Hurley took part in many major engagements, continuing in the southern islands until March, 1901. From there he was sent to the Island of Cebu, where the natives had also become insurgents. Returning to the United States in May, 1902, upon reporting at Angel Island, Calif., he was given his honorable discharge.

In July, 1905, Hurley reenlisted and received a special assignment at the Allegheny Arsenal, Pittsburgh, with the 1st Infantry. In February, 1906, he again sailed for the Philippine Islands, this time by way of New York and the Suez Canal. Sailing half around the world, they were out of touch with the United States for a long time and hence were not aware of current happenings in their native land. Approaching Manila on a Sunday morning, a government launch put out to carry the news by means of canvas stretched over the side and painted in huge letters that San Francisco had been destroyed by an earthquake. In Manila the Sunday morning papers were being cried by the newsies with the words, "San Francisco no get chow. Fine Business." - this being the native way of expressing consternation.

Hurley was sent to Camp Stotsenburg and later to Camp Connell on the Island of Samar. Again insurrection was raging among the Pulahans, a fanatic tribe of the Philippines, and Hurley had continuous campaigning until August, 1907. Upon his return to the United States in May, 1908, he was stationed at Vancouver Barracks, Washington.

In May, 1912, he sailed for Hawaii, remaining until 1918. Upon his return to the mainland he was sent to Camp Lewis, Washington, and received appointment as 2nd Lieutenant in the Aviation Section, Signal Corps. It was here that he met Mrs. Hurley, the wedding being a military one, with the ceremony at Vancouver Barracks. Later he was transferred to Vancouver Barracks as Assistant Division Property Officer. In July, 1919, he went to Indianapolis as Station Supply Officer.

Hurley came to McCook Field in January, 1921, and he has been allied with the present organization ever since. During the years before 1918, he served through all the grades in noncommissioned ranks. Besides General MacArthur, he has served under Generals Hughes, Funston, Murray, Wade and Morse.

Upon leaving Wright Field, Warrant Officer Hurley expects to reside in Portland, Oregon.

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SELFRIDGE AIRMEN OBSERVE FOREST FIRES

Forest fires within the last several weeks in upper Michigan have become so serious that PB-2 airplanes from the 1st Pursuit Group, Selfridge Field, Mt. Clemens, Mich., have been dispatched on several occasions with Federal officials as observers to survey the situation and map out defensive measures.

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THE NATIONAL AIR RACES AT LOS ANGELES, CALIF.

By Flying Cadet Robert C. Love, Air Corps

As a daily feature of the National Air Races held recently in Los Angeles, a squadron of A-17 Attack planes, coming from March and Barksdale Fields, demonstrated various types of attack and show formations. Eighteen planes and pilots took part in the swooping, low maneuvers and the novelty formations depicting the letters "L" and "A" that passed daily over the sky-turned faces of consistently record-breaking crowds of spectators.

Enthusiastic crowds cheered the long line of Northrop Attack planes as Major L.C. Mallory led his charges in column past the stands at the conclusion of each day's performance. At a radio command from the Major, the eighteen ships stopped simultaneously, and like trained circus horses pivoted in perfect unison to face the throng. The mechanical difficulties involved in making the airplanes bow was all that prevented the formations rivalling certain well known equine routines. The maneuvers, while fundamentally simple, proved spectacular and interesting by virtue of its novelty and perfect coordination on the parts of the pilots.

A near tragedy and the only mishap to mar the otherwise flawless record of March Field's four-day participation occurred on the second day of the Races. While 60,000 spectators watched in spell-bound apprehension, L.S. Whittman, lanky "flying professor" of Oshkosh, Wisconsin, maneuvered his tiny racing craft, its Menasco motor coughing asthmatically, past the home pylon and into a wide turn preparatory to an emergency landing at the east end of the field. Half way through an 180 degree turn, his motor failed completely, dropped him dizzily toward the mass of planes parked at the edge of the field, and practically into the cockpit of an A-17. Barely clearing the parked Attack ship, he sheared off his frail undercarriage on the antenna mast and the tip of a three-bladed propeller, and pancaked with considerable force to an expensive but fortuitous landing. Whittman was thoroughly shaken up, but was only slightly injured, suffering bruises and a gash over one eye.

Attack pilots from March Field participating in the events were: Major L.C. Mallory, 1st Lieuts. Nathan B. Forrest and E.H. Lawson, 2nd Lieuts. George H. Shafer, William Q.Q. Rankin, William A. Hatcher, David B. Kuhn, Frank R. Cook, Donald W. Eisenhart, Frederick W. West and Robert Ashman.

Pilots from Barksdale Field included Captain C.O. Pearcy, Lieuts. J.L. Daniels, J.H. Davies, F.M. Gavin, J.C. Houston, W.H. Wise, C.D. Jones, J.S. Templeton, J.F. Guilmartin, D.N. Motherwell, F.B. Hay, F.B. Scott, Cadets B.B. Bruce and W.D. Camp.

High ranking Air Corps officers at the meet were Major Generals Oscar Westover, Chief of the Air Corps; Frank M. Andrews, Commanding the General Headquarters Air Force; and Brigadier General Delos C. Emmons, commanding the First Wing of the General Headquarters Air Force.

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WORK BEGINS ON NEW AIR DEPOT AT SACRAMENTO

Ground was broken on September 8th for the construction of Sacramento's new $7,000,000 air repair depot. In the presence of approximately 15,000 spectators, and while four Army Air Corps squadrons soared over the site near Ben Ali, Hon. Frank F. Merriam, Governor of California, pushed down on a plunger which set off a blast of dynamite as the signal for the start of work. This site, when the project is completed, will house the Army's repair center for planes on the Pacific Coast, Hawaii and the Philippines.

Congressman Frank H. Buck, the opening speaker, stated that "this institution must be looked upon as part of our national defense. We are not anticipating a disturbance, but it behooves us to provide every necessary means of national defense."

The acting president of the Sacramento Chamber of Commerce, Mr. Percy Reese, then presented a silver shovel to Captain Arthur W. Parker, constructing quartermaster for the project.

Other speakers on the program were Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps; Major General George S. Simonds, 9th Corps Area Commander; Brigadier General Delos C. Emmons, Commander of the First Wing, GHQ Air Force; Captain Parker and Governor Merriam.

The four Air Corps squadrons, following the conclusion of the ceremonies, returned to the air depot site, flying in formation. They had come from Hamilton and March Fields, and were led by Colonel Clarence L. Tinker, Air Corps, commanding the 7th Bombardment Group at Hamilton Field, Calif.

A number of prominent Army officers stationed on the West Coast, also many civic leaders, attended the ceremonies and were introduced to the assemblage. Mr. Arthur S. Dudley, Secretary-Manager of the Sacramento Chamber of Commerce, was the master of ceremonies.

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Flying Cadet Troy Keith, of the Pursuit Section, Advanced Flying School, Kelly Field, Texas, became the 65th member of the Caterpillar Club at that field when, flying a P-12 plane, he fell into a spin and was unable to bring it out.

Lieut. Colonel Wolcott P. Hayes, Air Corps, departed from Kelly Field on September 3rd to assume his new duties as Air Officer of the Fourth Corps Area, with headquarters at Atlanta, Ga.

Colonel Henry B. Clagett, Air Corps, arrived at Selfridge Field, Mich., on August 27th, and on the following day at an officers' meeting he informally met all the officers and cadets of the garrison. Colonel Clagett has been assigned to take command of Selfridge Field.

Now that the vacation season is over, it is hoped to receive contributions of news items and articles from some of our Correspondents who have not been active of late. Names of delinquent scribes are not mentioned at this time.

21ST PHOTO SECTION IN MANEUVERS

The 21st Photo Section, Scott Field, Ill., having been ordered to participate in the 2nd Army Maneuvers, departed on August 4th and joined the Sixth Infantry motor convoy from Jefferson Barracks, Mo., arriving at the Allegan, Mich., airport at noon on August 6th. First Lieut. Kurt M. Landon, Commanding Officer of the 21st Photo Section; Master Sergeant Nico G. Loupos, 21st Photo Section, and Sergeant Wesley T. Cummins, airplane mechanic from the 15th Observation Squadron, arrived in the C-8 type photographic airplane at approximately the same time.

By morning of August 7th, the photo section had established "Camp Neal," which was named in honor of Private Jesse Neal, who died in an airplane crash near Scott Field on August 1st, and was ready to begin their work.

The organization was attached to the Umpire Section of the Second Army for photographic purposes and carried out its aerial photographic missions as a neutral unit. During the period of the maneuvers, the 21st made 829 negatives on 22 flight missions, covering a total of 41:15 hours flying time. From the 829 negatives a total of 2731 prints were made. Fifteen small mosaics were assembled from a number of these prints for the umpires. Each mosaic was speedily assembled with a stapling machine and was delivered to the umpires within from one and one-half to two hours after the plane landed from its photographic mission. While being taken, each print was automatically marked by the camera mechanism with the time of exposure and the date, and all obliques and verticals were plotted on maps before being sent to the umpires at Second Army Headquarters.

Photographs were made to show the following: Advance portions of the different armies, troop concentration areas, bivouac or camp areas, camouflages, truck convoys, troops on the march, and all other phases of the warfare.

Photographs were made with excellent results under all conditions, including complete overcast sky and heavy haze. Vertical aerial photographs were made at altitudes from 8,000 to 12,000 feet with both clear and overcast sky. Oblique photographs were made from 2,000 to 3,500 feet on clear days, at 1,000 feet when the ceiling was low, and at lower altitudes for special publicity photographs for G-2 Publicity Section.

Since speed was the primary factor in the simulated war conditions, only the quickest methods of turning out work were used. This explains not only the stapling machine used on the mosaics, but also the five-minute quick developing formula used on the 75 foot rolls of aerial film. These negatives were excellent in spite of the high speed process and the facilities available, and the prints obtained from these negatives were of excellent quality.

A K-3-B camera with a 12-inch lens was used exclusively for the aerial photographs. The Signal Corps made all ground photographs.

The Chief Umpire commended the 21st Photo Section for the good results obtained and for the information furnished through the use of aerial photographs.

Camp Neal was inspected by General Kilbourne and by Lieut. Colonel Hill on August 14th, and the Photo Section was highly commended by both for the set-up, the technical equipment and the results obtained.

This was the first time the 21st had ever gone out into the field on maneuvers. The personnel found the old style photographic trucks, which were borrowed from Chanute Field, to be too slow for the production methods required by present simulated wartime conditions. The new photographic trailer used by the National Guard unit at Kellogg Field is quite an improvement over the old type.

"Now, let us look at the other side of the story - the humorous side," says the News Letter Correspondent. "The 21st Photo Section was the only Army outfit assigned to the Allegan airport; it was based there to be near the umpire section of maneuver headquarters to which it was attached and which had its headquarters in the Allegan High School building. Four days after the 21st arrived at the airport, Sergeant Cummins, who was sent there to keep the C-8 photographic ship tuned up, became a line chief, trouble shooter, emergency crew and what have you for sometimes as many as a dozen planes. These other planes were brought to the airport by pilots reporting to Second Army Headquarters. Lieut. Colonel Hill immediately had additional mechanics assigned when conditions were brought to his attention.

The orderly tent, where four men of the 21st slept, became an information bureau, operations office, clearing house, dressing room and official bunkhouse for visiting pilots. The four bunks were occupied practically all of the time by someone. On one occasion Staff Sergeant Norman C. Bullivant wanted to get into his bunk, but being of small stature was unable to oust a six-foot, 220-pound occupant thereof. Master Sergeant Loupos often had to push through officers with rank from second lieutenant to lieutenant colonel in order to get into the orderly tent. Lieut. Landon likewise had to push his way into the tent to sign papers.

The personnel found the Michigan climate 'air-conditioned.' Though they were on duty twenty-four hours a day, most of them worked only eighteen hours out of those twenty-four. The boys did not know whether they got sleepy from the cool air or from fatigue, but they were sleepy; and then they had to solve the eternal problem of finding a place to lie down.

Well, those maneuvers were great, and the 21st is ready for more of the same sort, come what may."

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The 21st Airship Group, Scott Field, Belleville, Illinois, consisting of the 21st Airship Group Headquarters Detachment and the Ninth Airship Squadron, will go on maneuvers from September 15th through the 29th in the vicinity of Springfield, Ill.

Colonel Roy C. Kirtland, of the Inspector General's Department, arrived at Scott Field on Sept. 9th to inspect the technical facilities.

COLONEL ALBERT L. SNEED

Colonel Albert L. Sneed, Air Corps, at present on duty in the Philippine Department, was born in Conway, Arkansas, April 24, 1884.

Graduating from the United States Military Academy in 1908, he was commissioned a second lieutenant and assigned to the 25th Infantry, at that time stationed in the Philippines. Upon returning to the United States he was stationed at Fort George Wright, Washington, from Oct. 5, 1909, to January 3, 1913. He was then assigned to duty in Hawaii. Transferred to the 7th Infantry, September 22, 1914, he joined that regiment at Galveston, Texas, on November 26, 1914. From that date until December, 1915, he was on duty at various localities - Vera Cruz, Mexico; Fort Bliss, Texas; Douglas and Nogales, Arizona, and back at Fort Bliss. He was at Douglas with his regiment during the attack of Villistas on Agua Prieta in November, 1915. From August 14, 1916, to May 26, 1917, he was Assistant District Quartermaster and Assistant Division Quartermaster, El Paso district.

During the World War, Colonel Sneed, from June 6 to September 22, 1917, was stationed with his regiment at Gettysburg National Park, Pa., except for a period of three weeks in July, when he was on duty at Philadelphia, Pa., mustering the 6th Pennsylvania Infantry.

Detailed to the Aviation Section, Signal Corps, he was assigned, on October 1, 1917, as Commandant of the School of Military Aeronautics, Massachusetts Institute of Technology, Cambridge, Mass. He was relieved from this duty on April 25, 1918, in order to undergo flying training, and he reported at Rockwell Field, San Diego, Calif., May 3, 1918. Upon the completion of his training he was assigned to Love Field, Dallas, Texas, and was in command of this station August 19, 1918, to April 23, 1919, when he was transferred to Washington, D.C., for duty in the Supply Group, Office of the Director of Air Service. From May 26 to October 28, 1919, he was on duty as Assistant to the Chief of the Supply Group.

On November 7, 1919, Colonel Sneed reported at the Engineering Division, McCook Field, Dayton, Ohio, for duty as Assistant to the Commanding Officer. He was also a student at the Engineering School, graduating therefrom upon the completion of the one-year course. In October, 1920, he was assigned to duty as Air Officer of the Third Corps Area, Fort Howard, Md. In January, 1922, he was assigned to duty in the Office of the Assistant Secretary of War, Washington, and served there until October 1, 1922, when he was detailed as Assistant Military Attache for Aviation in Constantinople, Turkey, and reported for duty November 5, 1922. After nine months' service in the Turkish capital, Colonel Sneed, following several weeks' temporary duty in the Office of the Chief of the Air Corps, was assigned as a student at the Air Corps Tactical School, Langley Field, Va., and upon his graduation therefrom, June 15, 1924, reported as student at the Command and General Staff School, Fort Leavenworth, Kansas.

Colonel Sneed's graduation from Fort Leavenworth was followed by a little over two years of service at Kelly Field, Texas. He served as Post Executive Officer until September 8, 1926, and thereafter in various other capacities, including membership on the Faculty Board of the Advanced Flying School and as temporary commanding officer until August 1, 1927, when he was transferred to Crissy Field, Presidio of San Francisco, Calif.

After commanding Crissy Field and the 91st Observation Squadron until November 15, 1927, and the Rockwell Air Depot, San Diego, Calif., until July 14, 1930, he assumed command of the Fairfield Air Depot on August 15, 1930, and occupied this position until March 13, 1933, when he was transferred to Langley Field, Va., for duty as Executive Officer. On several occasions he was in temporary command of this field.

Assigned to foreign service, Colonel Sneed arrived in the Philippines on December 1, 1934. In addition to duty as Air Officer of the Philippine Department, he performed additional duty as Commanding Officer of the 4th Composite Group at Nichols Field, and was for a short time on detached service as Military Attache in Japan.

Colonel Sneed received his promotion to 1st Lieut., October 7, 1915; to Captain, May 15, 1917; to Major (temporary) Signal Corps, September 22, 1917; to Major, Regular Army, July 1, 1920; to Lieut. Colonel, August 1, 1932, and to Colonel, Air Corps (temporary), June 16, 1936. His flying rating dates from August 2, 1918.

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COLONEL JOHN H. PIRIE

Colonel John H. Pirie, Air Corps, at present Commanding Officer of the 17th Attack Group, GHQ Air Force, March Field, Riverside, Calif., was born in San Antonio, Texas, November 26, 1882. He graduated from the Agricultural and Mechanical College of Texas in 1906 with a B.S. degree, and on September 25, 1908, he was appointed a second lieutenant, Coast Artillery Corps.

Colonel Pirie served at Forts DeSota and Dade, Florida, from November 6, 1908, to December 12, 1910, when he was transferred to Fort Hamilton, New York, where he remained until December 30, 1912. He then attended the Coast Artillery School at Fort Monroe, Va., completing the course as a distinguished graduate on November 20, 1913. He was then assigned to duty with the Coast Artillery Corps at Fort Warren, Mass., to October 29, 1915; at Fort Strong, Mass., to June 16, 1916; and at Gloucester, Mass., in connection with radio experiments, to February 22, 1917. He served in connection with the coast defenses of Baltimore, at Fort Howard, Md., to July 19, 1917; and with the 8th Regiment, Coast Artillery, at Fort Adams, R.I., to August, 1917.

Colonel Pirie sailed for Europe in August, 1917, where he served as a member of the Heavy Artillery Board at Headquarters Railway Artillery Reserve, to June 5, 1918; as a student at the Staff College, A.E.F., to July 18, 1918; with Operations Branch, Headquarters Railway Artillery Reserve, to August 29, 1918; with the 43rd Artillery, A.E.F., in command of group and grouping, Railway Artillery Reserve, during St. Mihiel and Meuse-Argonne Operations to October 24, 1918; with Training Branch, Headquarters Railway Artillery Reserve, A.E.F., to December, 1918; and in command of Camp No. 1, Mailly, France, to February 1, 1919, when he was ordered back to the United States. While in France he participated in the Champagne-Marne, Aisne-Marne, St. Mihiel and Meuse-Argonne operations. He was a member of the Coast Artillery Board at Fort Monroe, Va., from February 28, 1919, to March 15, 1921.

Detailed with the Air Service on March 5, 1921, Colonel Pirie attended the Primary Flying School at Carlstrom Field, Arcadia, Fla., and upon his graduation on August 28, 1921, was transferred to the Advanced Flying School, Kelly Field, Texas, for training as a Bombardment pilot. He completed the course on January 21, 1922, and received the rating of "Airplane Pilot."

Colonel Pirie's first duty assignment in the Air Service was as commanding officer of Air Service troops at Aberdeen Proving Ground, Md., where he remained until October 19, 1923. While at the Proving Ground he worked with the Ordnance Department in the development of bombs. He next commanded the Second Bombardment Group at Langley Field, Va., to June 4, 1925; attended the Command and General Staff School, Fort Leavenworth, Kansas, to June 18, 1926, and upon graduation took command of the San Antonio Air Depot to May 19, 1927.

Ordered to the Philippines in June, 1927, Colonel Pirie served there as Assistant Chief of Staff for Personnel, Philippine Department, Manila, to August 28, 1927; and as Assistant Chief of Staff for Supply, Philippine Department, to May 16, 1930. During the course of his service in the Philippines as a member of the General Staff, he performed various tactical flying missions with the 2nd Observation and 28th Bombardment Squadrons at Nichols Field. Upon the completion of his tour of duty in the Philippines and his return to the United States in June, 1930, he was assigned to duty in the Office of the Chief of the Air Corps, Washington, where he served in the Plans Division until June 30, 1932, and as Chief of the Training and Operations Division to July 17, 1933.

Following a year of duty as a student at the Army War College, Washington, Colonel Pirie, upon his graduation on June 26, 1934, served as Air Officer of the 5th Corps Area, Fort Hayes, Ohio, to March 31, 1935. He commanded the 17th Attack Group, March Field, Calif., to January 10, 1936; was Post Commander, March Field, to February 28, 1936; temporarily commanded the 1st Wing, GHQ Air Force, and is now again commanding the 17th Attack Group.

Colonel Pirie was awarded the Purple Heart "for services as Commanding the Central Railway Grouping, A.E.F. During the extensive Air Corps Maneuvers in 1931, he commanded the 11th Provisional Wing, the organizations comprising same being equipped with a varied assortment of service type planes whose pilots executed formation flying in a most efficient manner despite the fact that they had not previously flown together as a unit. He was leader of a ferry flight of 17 airplanes from San Antonio, Texas, to France Field, Panama Canal Zone, via Mexico and Central American republics.

Colonel Pirie was promoted to the rank of 1st Lieutenant, August 28, 1909; to Captain, July 1, 1916; to Major (temporary), May 1, 1918; to Lieut. Colonel (temporary), October 26, 1918. He reverted to his permanent rank of Captain on March 28, 1920; was promoted to Major, Regular Army, July 1, 1920; to Lieut. Colonel, November 1, 1932, and to Colonel (temporary), June 22, 1936.

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LOW PARACHUTE JUMPS PROVE FATAL

Second Lieut. William W. Harding, Air Reserve, and Private Francis J. Maier, of Selfridge Field, Mich., were killed when they jumped from their burning PB-2 airplane four miles from Otsego, Mich., on August 17th. The airplane was in formation, operating from Marshall, Mich., a temporary base used in conjunction with the Second Army Maneuvers. According to witnesses, both men jumped at an altitude too low for the successful operation of their parachutes. Lieut. Harding had been stationed at Selfridge Field for about two years. He was 26 years of age and a resident of Los Angeles. Pvt. Maier, 19 years of age, was a native of Dowagiac, Mich.

PROGRESS IN MOTORLESS FLIGHT

The August issue of the "Gliding and Soaring Bulletin" in giving a detailed report of the 7th Annual National Soaring Contest at Elmira, New York, June 20 - July 5, 1936, states that it was the most successful contest ever held in the United States; that it was a milestone in the history of the motorless flight movement in this country and it was also a turning point.

While the number of pilots and soaring craft entered were somewhat less than in other years, the number of hours flown was, about twice the best previous figure, the miles flown across country were many times the best total flown in any other contest, the number of high altitude flights far exceeded the previous altitude performances, and the number of international and national records established reached the impressive total of five.

In the 16 days of the contest, there were only two days on which no soaring flights were made. The total number of pilots entered was 82, and the soaring craft entered numbered 23.

The total soaring time was 353 hours and 49 minutes; total number of take-offs, 337; total distance flown across country (distance of five miles or more), 1,283 miles; altitude flights of 500 feet or better, 145; flights of 30 minutes or better, 185; flights of five miles or better, 52; greatest distance, 146 miles; highest altitude, 6,516 feet, and greatest duration, 8 hours and 48 minutes.

By virtue of his altitude flight of 6,516 feet on June 29th, Emerson Melhouse, of Wyandotte, Mich., received the Warren E. Eaton Memorial Trophy. He also received the A. Felix Dupont $500 cash prize for being the first to exceed the existing American altitude record.

The 146-mile flight on July 5th, from Elmira to Ottsville, Pa., was made by Chester J. Decker, and his reward was the Bendix Gold Trophy and a $500 cash prize. Henry N. Wightman, on July 4th, made a flight of 135 miles from Elmira to Middletown, N.Y., and received the Bendix Silver Trophy and a $50.00 cash prize. The total amount of prize money amounted to $2,686.00.

Among those present at the contest were Mr. Igor Sikorsky, designer of many famous American aircraft; D.W.Tomlinson, one of the ranking pilots of the TWA; Dr. George W. Lewis, of the National Advisory Committee for Aeronautics; Mr. Earl D. Osborne, of the Edo Aircraft Corporation; Dr. Charles F. Brooks, head of Blue Hill Observatory, Harvard University; Prof. Otto C. Koppen, head of the airplane design section, Aeronautical Engineering Division, M.I.T.; Mr. R.P. Lansing, Vice President, and Lieut. Zeus Soucek, Development Engineer, Eclipse Aviation Corporation, and Col. J.Carroll Cone, Assistant Director of the Bureau of Air Commerce.

The 1937 contest will be held at Elmira N.Y., June 26-July 10, and will take the form of the first International Soaring Contest ever held in this country. Soaring pilots from Japan, Russia, Germany, England, France, Hungary, Italy, Austria, Switzerland, Holland, Belgium and Poland are being invited. The preparations for this contest are already under way.

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NEW COMMANDER OF 19TH BOMBARDMENT GROUP

Important shifts in the administrative structure of the First Wing of the General Headquarters Air Force were recently announced by Brigadier-General Delos C. Emmons, the commander thereof.

Lieut. Colonel Hubert R. Harmon was relieved from the position of First Wing Executive and assigned as commander of the 19th Bombardment Group, stationed at March Field, Calif. Colonel Harmon, a West Point graduate of the class of 1915, formerly served as Assistant Military Attache for Air to the American Embassy at London, England. In this capacity he traveled many places in the British Empire, notably Iraq and Egypt. A World War flyer, he brings to his new position a wealth of experience in the administration and training of Air Corps organizations. He came to March Field late in 1935.

The new Executive of the First Wing is Colonel Harmon's West Point classmate, Lieut. Colonel Leo A. Walton, formerly commander of the March Field district of the Civilian Conservation Corps before that district was amalgamated with the Los Angeles District. Colonel Walton has more March Field service than any other officer in the Army, coming to that station a year after it was reopened. For the past several months he has been serving as post inspector at March Field.

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Bombing Tests by 7th Bombardment Group

(Continued from page 6)

Field Sunday morning to return to Hamilton Field. To test the ability of the Group to penetrate as a unit any bad weather encountered, a fog was simulated in the San Joaquin Valley between Bakersfield and Fresno, Calif. Through this area, pilots proceeded individually under the hood, at one minute intervals with 200 feet difference in altitude between planes. At the end of the fog area, squadrons reassembled and the Group rendezvoused at Tracy, Calif., flying the remainder of the way in formation.

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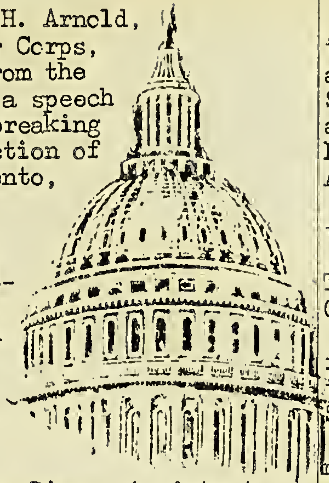
An article on GHQ Air Force Observation will appear in our next issue.

WASHINGTON OFFICE NOTES



Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, returned September 10th from the West Coast, where he made a speech upon the occasion of the breaking of ground for the construction of a new Air Depot at Sacramento, Calif.

Lieut. Colonel Howard C. Davidson, who until recently commanded the 19th Bombardment Squadron at March Field, Calif., reported for duty on September 9th, and was assigned as Executive Officer.

Lieut. Colonel Vincent B. Dixon, Assistant Executive, returned September 12th from leave of absence.

Major Arthur E. Easterbrook left August 28th for duty as umpire of the 3rd Army Maneuvers.

Colonel Rush B. Lincoln, Lieut. Colonels Rosenham Beam and William E. Lynd were at Wright Field, Ohio, on September 4th for a planning conference.

Colonel Harrison H.C. Richards and Lieut. Col. Ross G. Hoyt, Information Division, returned on September 7th from a cross-country flight to Selfridge Field, Mich.

Officers who recently departed on leaves of absence were Lieut. Colonel Robert L. Walsh and Major Malcolm C. Grow (Medical Corps),

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Officers who recently returned from leaves of absence were Major W.B. Souza, Captains Donald F. Stace, Luther S. Smith, Evers Abbey, and Robert V. Laughlin.

Major Charles Y. Banfill returned from a navigation flight to San Antonio.

Lieut. Colonel William B. Wright, Air Officer of the 5th Corps Area, Fort Hayes, Ohio, was a visitor during the course of a navigation flight.

Colonel Frank D. Lackland, Majors Barney M. Giles, B.E. Meyers and 1st Lieut. John A. Austin arrived from Wright Field on September 8th for the purpose of a conference.

Major Russell L. Maughan reported for duty as student at the Army Industrial College.

Captain James W. Spry reported on September 10th and was assigned to duty in the Supply Division.

Secon Lieut. E. S. Nichols reported on September 4th for temporary duty.

Colonel Chalmers G. Hall, Chief of the Supply Division, returned on September 3rd from a leave of absence.

SQUADRON REORGANIZATION AT KELLY FIELD

In accordance with orders from the Office of the Chief of the Air Corps, the reorganization at Kelly Field, Texas, was carried out on September 1st. This reorganization is practically the same set-up which was in effect in February, 1935, with the exception of a 12th Air Base Squadron.

The 81st Service Squadron was redesignated the 12th Air Base Squadron.

The 68th Service Squadron was redesignated The Headquarters and Headquarters Squadron, Air Corps Advanced Flying School.

Units constituted were the 61st School Squadron (Pursuit); 62nd School Squadron (Observation); 63rd School Squadron (Attack); 64th School Squadron (Bombardment).

The Air Corps Advanced Flying School Detachment was discontinued, and the 39th Observation Squadron, the 40th Attack Squadron and the 41st Observation Squadron were rendered inactive.

Major George M. Palmer commands the 12th Air Base Squadron; Major Louis N. Eller, the 61st School Squadron; Major Walter E. Richards, the 62nd School Squadron; Major Arthur G. Liggett, the 63rd School Squadron; Major Roderick N. Ott, the 64th School Squadron; Major Mark M. Woodward, the Headquarters and Headquarters Squadron, and Captain Ralph E. Holmes, the 22nd Photo Section.

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WAR DEPT. ORDERS AFFECTING AIR CORPS OFFICERS

Changes of Station: To Air Corps Training Center, Randolph Field, Texas: 1st Lieuts. James W. Brown, Jr., and Nelson P. Jackson from Panama Canal Department.

To Fort Lewis, Wash.: 1st Lieut. George G. Northrup from Panama Canal Department.

To Inglewood, Calif.: Major Leland C. Hurd to duty as Air Corps representative at the plant of the North American Aviation, Inc., from duty as Air Corps Representative at the Consolidated Aircraft Corporation, San Diego, Calif.

To Farmingdale, L.I., New York: Major Cortland S. Johnson to duty as Air Corps Representative at the plant of the Seversky Aircraft Corporation from duty as Air Corps Representative at the plant of the Glenn L. Martin Co., Middle River, Md.

To Panama Canal Department: Major William O. Butler, upon completion of course of instruction at the Advanced Flying School, Kelly Field, Texas.

To Mitchel Field, L.I., New York: Major Clarence H. Welch from duty as Air Corps Procurement Planning Representative at New York City. Major Welch is assigned to duty with the GHQ Air Force.

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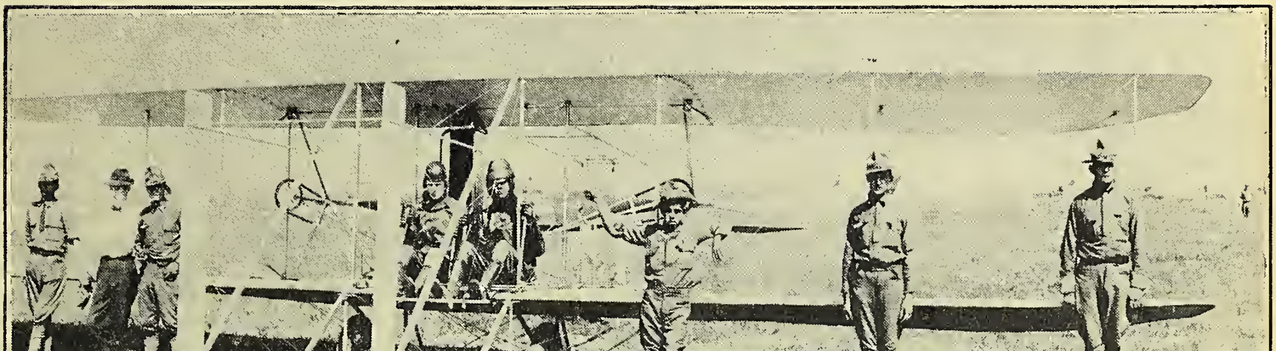
Lieut. Colonel Chang Tsu Chein, Commandant of the Air Force Technical School, Nanchang, Republic of China, recently visited Kelly Field. He was particularly interested in the method of training Attack and Bombardment students, as the new equipment in China is comprised mainly of these branches.

AIR CORPS NEWS LETTER

ISSUED BY OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT WASHINGTON, D.C.



1913 - First U.S. Army Aero Squadron in Texas.

VOL. XIX OCTOBER 1, 1936 NO. 19

VOL. XIX

Air Corps News Letter

NO. 19

Information Division
Air Corps
October 1, 1936
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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G.H.Q. AIR FORCE OBSERVATION

As the Air Force, with the advent of the "Superbomber," has taken on a new conception of duties and powers, so Observation must prepare itself to render an entirely new and extended service in its role of "eyes for the National Defense."

It is believed to be a well established principle of Air Corps tactics that Bombardment Aviation should not be required to conduct an original search for the targets it may be directed to attack. And, in order to plan a Bombardment attack intelligently, much information is necessary.

Prior to any mission over land or sea, the nature of the target must be known so that bombs of proper type and size may be carried. If the objective be on land, the exact location, the best routes of approach, useful landmarks, location of anti-aircraft units and hostile airdromes all should be known and oblique photos of the target should be available. If the target be at sea, its exact location at a given time, its course and speed and the weather enroute to the target must be known and, in addition, constant surveillance should be maintained in order that changes in course may be reported.

This task of location and identification of objectives at a distance falls to a new type of observation - the Air Force Reconnaissance Squadron. Its primary mission is to conduct distant reconnaissance service for the GHQ Bombardment and Attack Aviation and for the GHQ Air Force Commander. These squadrons, equipped with the latest development in long range airplanes, and manned by crews of highly trained specialists, must be available for one hundred percent operation as an M day force. Since distant reconnaissance must start on or prior to M day, it is obvious that the organization and training of these units cannot be postponed until after that date. In the interest of adequate National Defense and to prevent surprise, they should be ready and available for service always.

At the outbreak of hostilities, the duties of existing reconnaissance squadrons will be the patrol of areas - land and sea - within their operating radius and the collection of information on and furnishing of photos of all points of interest to the Air Force and GHQ Commander.

At the instant contact is gained with a hostile target, the problem of the Observation unit is doubled. Not only must the patrol be maintained or increased, but the specific objective should be observed at all times until its destruction is completed or the importance has ceased. Constant information should be supplied the local Air Force Commander of the precise location, composition, course and speed of a moving enemy target to permit an interception by our Bombardment units. As additional objectives make their appearance, the call upon Observation facilities will be further increased.

There are two lines of thought as to how the Long Range Air Force Reconnaissance Squadrons will fit into the Air Force functional organization chart. One line of thought is of the opinion that these Reconnaissance Squadrons should be under Base control for training rather than under Mobile Bombardment Group control. This plan allows the members of such a reconnaissance squadron to be thoroughly and completely conversant with the entire area over which it will operate in time of war, to know and operate with all radio stations that can and will assist, and will not require a period of time to become familiar with its area before it can start operating efficiently for the tactical unit for which it is gathering the necessary information. The assignment of Long Range Reconnaissance Squadrons as area units to the vital military areas of the United States would create a set-up so that this type of reconnaissance service would be waiting for Bombardment or Attack groups in any area in which they might be required to operate in time of war.

Another line of thought suggests the plan of having a reconnaissance squadron as an integral part of each Bombardment group. Where the Bombardment group would be ordered there would go also the reconnaissance squadron. It would be necessary under such a plan for a reconnaissance squadron to become familiar with its area before it would be of maximum value to the Bombardment Group which it was supporting. Since cooperation between the reconnaissance squadron and Bombardment groups mainly is one of communication, it is believed that, as communication procedure becomes more standardized, very little efficiency in operation would be suffered by having the reconnaissance squadrons belonging to a Base rather than being a part of the Bombardment group itself. In any event, the tactical operation of the reconnaissance squadron should be under the senior Air Force combat commander in each case.

The two schools of thought each have their relative merits. Only experience will determine which finally will be adopted and which will prove the more efficient.

Another idea, of course, would be to provide certain squadrons as permanent Base or Area Reconnaissance Squadrons, and to have still additional ones assigned to each Bombardment group.

The general requirements of an airplane to perform these missions will be- First, approximately double the range of the Bombardment served in order to permit patrol, search and surveillance at the extreme radius of action of the bombers; second, accommodations for a combat crew large enough to relieve the pilot, navigator, radio operator and flight mechanic during the mission, and that part of the crew off duty would act as gunners in defense of the airplane. A ship commander, with no assigned flight duties, would complete the crew. All possible improvements to increase comfort of the personnel, such as sound proofing, cabin heaters, etc., should be provided to maintain efficiency at its highest peak during extended missions. Dependable radio communication and all-round defense are essential.

Standards of personnel requirements of such an organization as outlined above should be extremely high. Pilots should be graduated to this service via other "big ship" types and then must learn that nice cooperation with the navigator which makes possible accurate navigation. Navigators understanding the theory and practice of the various means of navigation must perfect themselves by repeated missions accurately to locate and report distant bombardment objectives. Radio operators and flight mechanics, each in their own sphere, must obtain a standard of proficiency not now required in other classes of aviation and finally, by constant association in the air, the entire crew must be welded into a harmonious unit under the ship commander, instantly responsive to his commands and, in most cases, anticipating his desires.

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THE LINK TRAINER

Link Trainers now in Air Corps service, for the purpose of providing preliminary flight training for flying cadets, total twenty-one. An improved model of these trainers has recently been delivered to the Materiel Division and five of the existing service models will be reworked to incorporate improvements in the new model and will be known as Link Trainer, Type C.

The Link Trainer, Type C, consists of a fuselage which can assume all the different positions of an airplane inflight and an instructor's table. The fuselage contains the normal airplane controls (rudder and stick) and a complete set of flight instruments, including a magnetic compass, airspeed indicator, bank and turn indicator, rate of climb indicator, directional gyro, artificial horizon, altimeter, radio compass indicator, marker beacon indicator, and tachometer. It has ear phones and a microphone for use in radio training and also for receiving instructions from an instructor. Two cockpit lights are provided for use when the hood is placed over the cockpit.

The instructor's table has a keying device which will properly key and identify six radio range beacons and two oral marker beacons. The oscillator and keying device are built into one drawer for convenience. In addition, there are the following controls: beam phone switch, phone volume control, radio range control, radio range volume control, radio compass control, radio compass sensitivity control, marker beacon selector switch and marker beacon volume control, and ultra-high frequency beacon light switch. Charts are mounted on the instructor's table which show the radio range and marker beacons. Problems may be set up on these charts involving cities, mountains, etc., located on them. The student is given an additional chart, and during the problem an automatic course recorder plots the course the student flies. This makes it possible for the student, after completing the flight, to see where he has flown, find out what mistakes he has made, and discuss the problem with the instructor.

The original six Trainers now in the service do not have a complete set of instruments for instrument flying, the recording device essential for proper instruction, nor provision for simulating instrument landing conditions, and it is these improvements which will be incorporated to bring these Trainers up to date.

77TH PURSUIT SQDN. COMPLETES MANEUVERS

A most enjoyable and successful week was spent in Natchitoches, La., by the 77th Pursuit Squadron of Barksdale Field, La. The greater part of the week was spent on interception problems. Lieut. Puryear proved himself capable and at times quite mystifying as a plotting board operator. The enemy was intercepted and defeated on every occasion, for which due credit was claimed jointly by Lieuts. Puryear and Piper.

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FLYING BY RESERVE OFFICERS AT OAKLAND

The activities of the Air Corps Detachment at the Municipal Airport, Oakland, Calif., in connection with flying by Reserve officers, were augmented by the delivery of their first BT-9 airplane on September 10th. The arrival of the first basic training plane of this type at the Municipal Airport affords all Group I Air Corps Reserve pilots added incentive to greater interest in inactive flying.

"The new creature," says the News Letter Correspondent, "was fondly eased in among our five ancient but loyal PT-3A's. The attention of everybody was drawn to the apparent consternation of those proud old girls and one could almost vision the PT's turning pale and shudder, feeling that the day is not far away when they will be relegated to that place where all the good and faithful some day must go."

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AIR DEPOT HAVEN FOR LANGLEY FIELD PLANES

On September 17th, The Middletown Air Depot, Pa., became host to 19 pilots and 12 enlisted mechanics who arrived from Langley Field, Va., in 19 airplanes of the GHQ Squadron and 2nd Base Squadron of that station. This visit was occasioned by the arrival of a hurricane off the Virginia Capes which threatened to flood Langley Field.

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LIVE BOMBING PRACTICE PHOTOGRAPHED

The 20th Photo Section, Langley Field, Va., made photographs of the live bombing practice of the 20th Bombardment Squadron. On the 1100-lb. mission, Lt. Rogers was pilot; Lieut. Sutherland, bomber, and Master Sergeant Leiby, photographer. Lieut. G.E. Williams was pilot on the 600-lb. mission; Lieut. Glantzberg, bomber, and Staff Sergeant Taylor, photographer. On the 300-lb. mission, Lieut. Sutherland was pilot, Major Giles Bomber, and Staff Sergeant Boland, photographer.

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MODERN EQUIPMENT AT A.C. TECHNICAL SCHOOL

It may be of interest to graduates as well as to prospective students to know that the course for Airplane Mechanics at the Air Corps Technical School, Chanute Field, Rantoul, Ill., is probably better supplied at this time with modern equipment for instructional purposes than at any other time since this course was inaugurated.

In addition to the many smaller sectionalized components used to demonstrate specific features, the following complete airplanes and engines are in use:

Airplanes:

3 BT-2A	3 O-19B
1 P-6A	2 A-11
1 P-12D	1 A-12
2 P-26A	1 A-17
1 XP-29B	1 B-10
1 PB-2A	1 XB-14

Engines:

Pratt & Whitney	Wright
19 R-1340	1 XR-1510
6 R-1340D	2 R-1750
2 SR-1340D	12 R-1820
1 R-1830	Curtiss
	1 V-1570-CM
	19 V-1570

These airplanes and engines are used exclusively for school purposes, and with the exception of the PB-2A, A-17, B-10 and XB-14 which are assigned to the Model Flight, are "not to be flown."

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AN ILL WIND, ETC.

An item released to the press by the Bureau of Aeronautics, Navy Department, is to the effect that one of the pilots of VB-1 Squadron, on landing at the field at Tucson, Arizona, turned rather sharply to the right at the end of his roll. The result was the customary broken wing and wheel. On walking up to the Army hangar he was met and profusely thanked by a small boy who displayed the results of a winning bet. A little investigation disclosed the fact that a regular practice is indulged in by the children who hang around the airport of betting on whether a plane will ground loop or not on landing. The odds are even, it was further found. It seems the winds on the field change quite radically and very quickly. A local civilian proudly asserted that Tucson has the ground-loopingest field in the country.

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With the return of the 4th Observation Squadron from Bellows Field on September 5th, the 5th Composite Group completed its seasonal field training. While in the field, the training of enlisted aerial gunners was accomplished as well as training of ground anti-aircraft machine gun crews. Pistol practice, in accordance with the requirements of Headquarters Hawaiian Department, was also accomplished by all ranks.

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AIRPLANE MAINTENANCE AT LUKE FIELD

The newly organized Group Maintenance Department, 5th Composite Group, Luke Field, T.H., established for the purpose of performing 20 and 40-hour inspections on the B-12 airplanes, began to function on August 24th, under the direction of Captain Signa A. Gilkey, who was transferred from the command of the 4th Observation Squadron to this important position. Much is expected from this new organization, which was adopted largely on the recommendations of Captain Delmar H. Dunton, Engineering Officer at Hamilton Field, who recently returned to that station after spending three months at Luke Field instructing the engineering and piloting personnel of the Group in the assembly, maintenance and operation of the recently arrived B-12's.

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MOVING OF SHOPS AT MIDDLETOWN AIR DEPOT

The gradual moving of the Air Corps shops at the Middletown Air Depot, Pa., is progressing steadily. A total of 45% of the Depot shops were moved into the new location and the remainder is following rapidly. It is estimated that another month should see the entire equipment moved and each department functioning 100% in its new quarters.

Many discouraging delays were encountered in the construction of the new shop building. The two greatest factors of delay were the many difficulties experienced in obtaining the new machinery for the shops and the flood of the Susquehanna River early this past Spring, when several feet of water covered the floor and caused the wooden block paving of the shops proper to swell and buckle. While many of the blocks could be used again, the expense of repaving the floors was quite large.

Ground was broken on May 24, 1934, and the first steel was erected on July 20th of that year. The new shops have better than five acres of floor space, same being erected at a contract price of $679,000.

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The officers and men of the 77th Pursuit Squadron returned to Barksdale Field at the end of the maneuvers and immediately started a heavy schedule of ground gunnery. Although closely pressed by several others, Flying Cadet Chester W. Cecil at present seems to be be the best shot of this organization.

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The News Letter would like to hear from National Guard Division Aviation units.

MANEUVERS BY 79TH PURSUIT SQUADRON

Monday, August 17th, found the 79th Pursuit Squadron, stationed at Barksdale Field, Shreveport, La., proceeding to and occupying the field camp at the Municipal Airport, Natchitoches, La.

Commanded by Major Carlton F. Bond, Air Corps, the detachment consisted of eight officers, five flying cadets and 56 enlisted men. The truck convoy under the command of the "Genial Doctor," Captain Robert E. Lee, Medical Corps, arrived at 10:00 a.m.

At noon when the twelve P-26 airplanes arrived, the camp was completely organized and a piping hot lunch was awaiting the pilots.

The camp was visited the next day by Lieut. Colonel Millard F. Harmon, commander of the 20th Pursuit Group, and his Adjutant, Lieut. McConnell.

There was both work and play at the camp, and swimming was the most popular sport. Camp was broken very quickly and effectively, the tents were packed and the airplanes were on their way home by nine o'clock on the morning of August 22nd.

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NO TROUBLE LANDING AT LUKE FIELD

The landing mat at Luke Field, T.H., is now bigger and better than ever, having been lengthened by 500 feet and widened by 100 feet, making a landing mat 3,000 feet by 400 feet. In addition to being enlarged, it has been tastefully decorated by the addition of an elaborate system of longitudinal and transverse lines, topped off with a pleasingly symmetrical circle in the center. The News Letter Correspondent says the chief artist responsible for this work, 1st Lieut. Robert W. Warren, is deserving of commendation.

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35TH PURSUIT RECEIVES QUOTA OF PB-2A's

The 35th Pursuit Squadron, Langley Field, Va., having received its quota of ten new PB-2A's from the factory, is rapidly becoming familiar with the maintenance and performance of the new equipment. The Squadron is engaged in ground gunnery at present, and all pilots have expressed satisfaction in the way the new airplanes perform on the gunnery range.

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As part of a test for the Commanding General of the 3rd Corps Area, the 2nd Photo Section, Langley Field, Va., made a photographic mosaic of Fort Meade, Md., covering 36 square miles, for lithographic reproduction. A K-3B camera was used at 10,000 ft. altitude, and 164 exposures were required to cover the area. Lt. Odom was the pilot, and Mr. Sgt. Leiby the photographer.

LANGLEY FIELD BOMBING PERSONNEL IN SECOND ARMY MANEUVERS

By the News Letter Correspondent

AS the 2nd Army Maneuvers came to a close, the 2nd Bombardment Group, with a feeling of pride, looks back over the several missions which it contributed to the Maneuvers as a whole. These missions are briefly summarized and outlined in the following paragraphs:

On August 1st, flight echelons of the 49th and 96th Bombardment Squadrons, consisting of eighteen B-10B airplanes, and led by the Group Commander, Lieut. Colonel Charles B. Oldfield, departed from Langley Field at 6:00 a.m., and executed a simulated bombing assault on Chanute Field. The attack was made precisely at the scheduled time. After a brief stop at Chanute Field for lunch and servicing the ships, the Group proceeded to Selfridge Field for the night. On the following day, with support of Attack units from Barksdale Field, the Group assaulted the enemy ground forces at Fort Knox, Ky., and then proceeded to Patterson Field. The return flight to Langley Field was made the following day.

On the night of August 7th, a 3-plane formation from the 49th Squadron made an attack on Fort Knox. Because of inclement weather, it was necessary to abandon the original plan of leaving Langley Field in late afternoon, assaulting Fort Knox, and then continuing to Patterson Field for the night. Instead of this arrangement, three planes, led by Captain C.V. Haynes, Commander of the 49th Squadron, took off from Langley Field at 2:30 p.m., direct for Patterson Field, arriving there at 6:00 p.m. After dark, the flight left Patterson Field and proceeded to Fort Knox. The approach to the mythical target was made at an altitude of 15,000 feet with running lights turned off, as an attack was anticipated from ground forces, which consisted of two regiments of anti-aircraft artillery. The run was successfully accomplished and, as predetermined, the flight leader released a flare over the target and turned on his running lights before being picked up by the searchlights.

On August 9th, Lieut. Colonel Oldfield led a formation of 15 B-10B airplanes, consisting of flight echelons of the 96th and 49th Squadrons, from Langley Field to Selfridge Field, preparatory to an aerial review over the Allegan area. This review took place the following day, and was very successful. Attack units from Barksdale Field, Pursuit from Selfridge Field, and the 15 airplanes of the 2nd Bombardment Group participated in this demonstration.

An interesting part of the Second Army Maneuvers was performed by the 96th Bombardment Squadron on August 13th at 4:30 p.m. Three B-10B airplanes, led by Captain R.E. Nugent, departed from Langley Field to attack by night enemy ground forces concentrated in the Allegan Area. Weather conditions were none too good. Due to an opaque haze, visibility was very poor.

The wing positions were flown by Lieuts. Simenson and Armstrong, and the navigation for the flight was performed by Lieut. Joe Miller.

Each ship was equipped with oxygen for high altitude operation, and the orders called for an attack on the Allegan Area at an altitude of 20,000 feet. Despite the surface heat, the men were forced to don their heavy winter flying equipment. The formation climbed to 10,000 feet and headed towards the objective through the thick haze. Thunderstorms were encountered and the three planes were separated shortly after leaving Langley Field. By radio instructions, each ship flew by instrument and maintained a heading of 300°. By the time Camp Custer was reached, the weather had improved, and at this point the three ships were reassembled just below the clouds. The trio then climbed up through the clouds individually, assembled, and headed towards the target. By skillful navigation the formation glided down through the clouds, breaking through directly over the target at an altitude of 8,000 feet, and the flares were released at the designated time. After maneuvering about in that vicinity and working with the searchlights, the flight proceeded to Selfridge Field, arriving there near midnight, after having remained in the air for over seven hours. A check of gasoline showed that each pilot had enough left for over two more hours' flying.

It is obvious that this mission was successfully executed under adverse conditions with a high degree of accuracy and precision. Much credit is due those who participated.

The last mission to be flown in connection with the Second Army Maneuvers was an aerial review over the Allegan Area. The 2nd Bombardment Group furnished 18 B-10B airplanes for this review, composed of flight echelons of six airplanes each of the 96th, 49th and 20th Bombardment Squadrons. The formation was led by Lieut. Colonel Oldfield and departed from Langley Field for Selfridge Field on the morning of August 19th. The review took place on August 20th, after which the Group returned to Langley Field.

One of the interesting features of this mission was the simulated landing through the clouds upon return. The following conditions were assumed:

1. That the ceiling at Langley Field was 600 feet.
2. That the top of the clouds was at 3,000 feet.

With these assumptions, the landing was carried out in accordance with the following instructions taken from the Operations Memorandum:

a. Group Commander will approach Langley Field on the North leg of the radio beam, flying a course of approximately 169°, at 5,000 feet altitude, until the cone of silence is reached.

b. Group Commander will circle the cone of silence in Group javelin down formation. Beginning at the tail of the column, the Group Commander will order flights to drop out of formation at two-minute intervals.

c. Each flight leader, after leaving formation, will immediately head on a compass course of 253° and will fly on this course at 150 m.p.h. for six minutes, losing altitude to top of clouds.

d. Flight leaders, after flying for six minutes on a compass course of 253°, will make a left turn of 180° and fly on a heading of 73°. Flight leaders will then give rudder signal to open formation.

e. Upon signal from flight leader to open formation, No. 2 and No. 3 of each flight will fly 88° and 58° respectively, for two minutes, at 150 m.p.h., above the clouds. The flight leader will continue on a course of 73° at 150 m.p.h. for two minutes.

f. Exactly two minutes after the signal from the flight leader has been given to open formation, each airplane of the flight will fly a compass course of 73°, descend at 400 feet per minute, at 90 m.p.h., to an altitude of 300 feet.

g. Immediately upon descending under the clouds, proceed to Langley Field and land. Join flight formation if the airplanes are visible, if not land individually.

Under simulated conditions this system proved very satisfactory, and it is believed that with a few minor changes it may be adopted by the Group as a standard indoctrination for landing a formation through the clouds.

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During the month of August, the Engineering Department of the San Antonio Air Depot overhauled 20 airplanes and 56 engines and repaired 21 airplanes and 15 engines.

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TRAINING ENLISTED MEN TO SPEAK IN PUBLIC

The News Letter Correspondent from Luke Field, Hawaii, states that although the Army has never developed a Demosthenes, a scheme is on foot in the Blue and Gold Club of Luke Field to cultivate public speakers among the soldiers who will compete in three-minute talks on professional Air Corps subjects, such as: "What It Takes to be a Good Airplane Mechanic." A prize is to be given to the winner. The three judges are to be selected from among the line chiefs on the hangar line.

As the first anniversary of the Blue and Gold Club nears, the program committee, of which Private Lloyd D. Miller is the chairman, states that the policy of guest speakers will be gradually abandoned, although occasionally it is planned to have Air Corps officers who are experts in their line to lecture on technical subjects which will benefit directly the Air Corps soldier. Thus, a professional spirit is to be strengthened in the Air Corps by using the Blue and Gold Club as the medium.

In furtherance of the professional spirit, Captain Signa A. Gilkey, Squadron Commander of the 4th Observation Squadron at Luke Field, delivered a thorough and brilliant lecture on the Martin B-12A Bomber which has seen service at Luke Field for only a few months. On August 30th, 1st Lieut. Daniel A. Cooper lectured on Air Corps Communications. As the latter officer is both the Group Communications Officer for the 5th Composite Group as well as the Wing Radio School Officer, he covered both the theoretical and the practical phases in a brilliant manner.

It is the belief of Chaplain Milton O. Beebe, who with his assistant, Private Lloyd D. Miller, fathered the Club, that the development of speaking in public for the enlisted man will not only increase his mental alertness but also his capacity as a noncommissioned officer. In this way the efficiency of the Air Corps can be aided. Morale is also greatly aided by the development of the professional spirit in the individual soldier.

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NAVIGATION TRAINING IN 88TH SQUADRON

The 88th Reconnaissance Squadron, stationed at Hamilton Field, Calif., has completed the class room work in Dead Reckoning, and is now taking up the theory of Celestial Navigation, under the instruction of 1st Lieut. Richard C. Lindsay, Air Corps. The practical application of both Dead Reckoning and Celestial Navigation will be combined in flying the assigned missions.

The commanding officer of the 88th, Lieut. Colonel Calvin E. Giffin, Air Corps, has the unique distinction of advancing from the rank of Captain to that of Lieut. Colonel while commanding the same Squadron. Colonel Giffin assumed command of the 88th on March 17, 1932, as a Captain. On March 1, 1935, he was advanced to Major, and on August 26, 1936, to Lieutenant Colonel (Temporary).

ILLINOIS NATIONAL GUARD AIRMEN IN SECOND ARMY MANEUVERS

By 1st Lieut. Monro MacCloskey,
Adjutant, 33rd Division Aviation.

ON August 8, 1936, Major C.A. McElvain led the flight of the 33rd Division Aviation, composed of the 108th Observation Squadron, 108th Photo Section, and 108th Medical Department Detachment, from the Municipal Airport at Chicago for its two weeks field training at Camp Custer, Michigan. Ordinarily summer training is held at Camp Grant, Ill., but our locale was changed this year in order to participate in the Second Army Maneuvers.

Normally, our base would have been in the rear of the front lines, but in view of the fact that suitable facilities were not available we were based at the Kellogg Airport, with an advance landing field in the Allegan district two and one-half miles in the rear of the Division Command Post. We had ten planes, one O-31 and the rest O-38's, two of which were E's. Most of the ships were equipped with the new type two-way radios. The ships, equipment, and men were put to a severe test during the maneuvers, because there were several occasions when crews worked on 24-hour shifts. The total flying time of the pilots for the two weeks was 524 hours and 45 minutes, with one pilot having logged 59 hours and 25 minutes, but the combined pilot and observer time for the same period amounted to 673 hours and 10 minutes.

During the Maneuvers in the Allegan District we served a three-fold purpose, having ships on Division, Corps, and Army observation missions. The planes operating on the Division missions were divided into radio ships and drop and pick-up message ships. The Corps missions were the same type, but the Army missions were conducted entirely by radio. The Division planes worked with the front line troops as well as with Division Headquarters, but the Corps planes worked only with Corps headquarters. Of course, ships were on the advance landing field for command missions. The war really began after the troops moved from their concentration areas into the concealment zones. We were able to assist the ground troops by notifying them wherein their gun emplacements, trucks, or men were visible from the air. From then on our various assignments to the missions took place, and we cooperated with all branches of the service.

One of the most interesting phases was the locating of the 1st Cavalry (Mechanized). They penetrated through our Army observation line, but were picked up by our Corps ships and their entire progress reported by Corps observation until they reached the bivouac areas. Before daylight on the morning on which the mechanized Cavalry was to make its first attack, we had ships in the air assigned to Division and Corps to report on their movements. We were able, because of the headlights on the vehicles, to report the strength, movement, and disposition of the enemy from the time they left their camp. We did this on two successive mornings. Our reports were received at the Division CP by our own trailer receiving the Division messages and by a radio mounted on a truck for the Corps messages. By means of our radio communications, General Keehn and his staff were able to follow practically every move of the mechanized Cavalry.

One of the greatest factors contributing to the success of our radio communication was the construction of a radio trailer to be towed by a Chevrolet truck, which would be a mobile unit that could work with any of our ships in the air, an idea conceived by our enterprising engineer officer, Captain W.V. Newhall. Although started only a month before we went to camp, by dint of strenuous labor this trailer was completed. It was constructed of angle iron, steel tubing and plywood, with a gasoline engine to drive the motor generator. We had set up this trailer at the Kellogg Airport, but upon the request of Division Headquarters it was installed at the Division CP. The Division Staff were so pleased with its operation that a loud speaker was attached, so that the two-way conversation could be heard by all officers in the vicinity.

One of the other features of the camp was the utilization of a photo trailer which the Air Corps Materiel Division, Wright Field, Ohio, had sent up for testing. During the one-day war between the 32nd and 33rd Divisions, which took place on the Camp Custer area, this trailer was set up outside the Division CP. An illustration of how successfully this trailer worked may be readily shown. A telephone message was received at the Kellogg Airport requesting photographs of a certain terrain in front of the objective of the 33rd Division. Being on the alert, the photo ship took the air immediately, and eight minutes from the time the phone call was received wet prints of the area were delivered to the staff officers at Division CP. This was only one instance of how efficiently this trailer functioned. Many photographs, as well as mosaics, were taken during the Maneuvers, and a real test was made of the photo trailer. In a test run, the 108th Photo Section, headed by Lieut. Roscoe Burley, turned out 316 prints in one hour's work.

(Continued on page 9).

WEATHER FOR THE ARMY

By Sergeant William S. Giles,
Hamilton Field, Calif.

ONE of the fifty odd military meteorological stations strategically located throughout the United States and its possessions daily supplying detailed weather information and flying conditions to the fighting forces of our country is the Meteorological Station maintained and operated by the Signal Corps at Hamilton Field, Marin County, Calif.

Heading the local organization which consists of two commissioned officers, two noncommissioned officers and four other enlisted men, is Major Walter B. Hough, Air Corps, as Post Meteorological Officer. The Assistant Meteorological Officer is Lieut. Harold H. Bassett, Air Corps, a recent graduate of the course in Meteorological Forecasting at the California Institute of Technology, who has direct supervision of the Forecast Section of the Station.

In active charge and supervising the operation of the Station is Staff Sgt. Walter J. Olszowy, Signal Corps Meteorologist, recently in charge of the Crissy Field Station at the Presidio of San Francisco, Calif., before its abandonment as a landing field several months ago. Sgt. Olszowy replaces Sgt. William S. Giles, Signal Corps Meteorologist, in charge of the Hamilton Field Station for the past year and a half, who after eight years of meteorological work in various posts throughout the Army, is returning to civilian life the latter part of September.

The station personnel is completed with Private Francis T. McHenry as Assistant Forecaster, and Privates, 1st Class, William A. Boutillier, Macrodt, and Private Lynn H. Robson as Junior Observers.

Observations of all meteorological phenomena such as sky conditions, regarding cloudiness; unsettled conditions of weather; ceiling heights, determined by visual observations during the day and by the use of the ceiling light projector and clinometer at nights; temperature and dew point of the air; direction and speed of the surface wind from anemometers and the barometric pressure with the pressure tendency of change are some of the data included in the hourly reports which are distributed by the radio and Department of Commerce teletype system. Voice radio broadcast of these weather reports are made at five and thirty-five minutes after the hour throughout the twenty-four hours daily, advising pilots and others of the existing weather conditions at the field.

In addition to the above reports of weather, upper air soundings are made at eight and ten o'clock in the morning and at noon each day to furnish pilots with directions and speed of winds at various altitudes above the earth's surface in order that they may take advantage of more favorable winds for flying. These soundings are taken with a free pilot balloon of rubber inflated to rise at the approximate rate of 200 yards per minute. A theodolite, an instrument somewhat similar to a surveyor's transit, is trained on the balloon, and it is followed by an observer, who at the end of each minute relays the readings of the elevation and azimuth angles to an observer in the station by telephone. The observer in the station plots the positions of the balloon at the end of each minute, and from the plots extracts the wind speed and direction by the use of a protractor. Wind speeds and directions well over an altitude of 50,000 feet have been determined. This is much higher than our present day airplanes have been able to attain. These winds after being determined are reported to the radio station for transmission by broadcast, and are sent out by teletype also.

At 7:00 a.m. each day, a consolidated report is received from Washington showing the weather in code form from well over 250 stations in the United States, Canada, Mexico, Cuba, Alaska, and certain islands in the Pacific, and from a number of ships on both the Atlantic and Pacific Oceans which take meteorological observations. All pertinent weather data is included from each station, and this information plotted on a map. On this completed map is shown the disposition of the various pressure areas and the locations of the various frontal lines of the air masses from which the forecaster is able to make his forecast or prediction of the weather that may be expected in the immediate future. From this completed map, pilots are enabled to picture in a detailed manner the weather conditions that they may expect to encounter along any airway and are informed of unfavorable conditions such as adverse winds, storms and low ceilings, fog areas and so forth, as well as areas in which they can expect favorable weather and advantageous winds at various levels.

Statistical meteorological records are maintained at all times so as to be available to those desiring information as to seasonal and normal values. A complete knowledge of current and statistical meteorology enables the proper authorities to take the necessary measures in advance to protect supplies, equipment, provide shelter for both troops and animals, make ample preparation to provide against enemy gas attacks, as well as providing information of weather which would be favorable for attack on the enemy by either land or air.

HONORS FOR CHANUTE FIELD INSTRUCTOR

At the International Convention of the Photographers' Association of America, held in Chicago, August 24th to 28th, Mr. Harold Hedger, Senior Instructor, Ground Photo Division, Department of Photography of the Air Corps Technical School at Chanute Field, Rantoul, Ill., had three of his pictures accepted by the Jury of Selection for hanging in the picture exhibit of the Convention.

One of these pictures attained a position of honor in the prize class by the award of a Blue Ribbon in the commercial classification. Any place in the picture exhibit must be won in open competition with all photographers in the world, as the Convention is International. Several thousand pictures are submitted from all parts of the world. The prizes, which include the medal and Blue Ribbon winners, are awarded among the fifty best pictures.

The picture which won the Blue Ribbon was a field artillery piece in action at night, the photograph itself being made by its own light, namely, the flash of gunfire. The officer in command and the gun crew are all plainly visible. The pictures awarded the honor of hanging in the exhibit were also interesting. One was an example of the circular symmetrical composition in an exterior commercial subject, a system of scaffolding used in the repair of a smokestack being selected to exemplify this feature. The other picture, an example of night photography made with the aid of nothing more than a 2-cell pocket flashlight for the illumination, was of a subject very common in the Southern States but somewhat rare in Illinois - an ugly cactus which blossoms only at night; the very beautiful flower it gives is sometimes known as "Star of the East."

All three of the above mentioned pictures are typical of the varied kinds of work a photographer may be called upon to do at any time and are in line with instruction at the Air Corps Technical School.

Mr. Hedger was appointed as Instructor in Photography, U.S. Army Air Corps, with assignment to Chanute Field, in March, 1931, and is a graduate of the Illinois College of Photography. This occasion marks the second time Mr. Hedger has won international honors, the first at the Convention in 1932.

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Illinois Airmen in Second Army Maneuvers

(Continued from Page 7).

The enemy air corps interrupted the work at the airdrome on its daily visits by subjecting us to a gas attack, but it did us no harm. We returned home August 22nd, war-worn and weary, but well pleased over an exceedingly interesting and instructive camp.

THE AIR TRAINER

A new device, known as an air trainer, has recently been developed at the Air Corps Materiel Division, Wright Field, Dayton, Ohio, for the purpose of instructing students while flying in the art of flying and landing by instrument alone without the use of the radio range beacon and truck equipment usually employed in instrument flying and landing. The need of such equipment is apparent when it is realized that a large number of students at a training center could not without great danger make practice flights under the hood with all of them using the same standard radio landing equipment and tuning in on the same radio range beacon. By means of the air trainer it is possible to simulate actual instrument flying and landing conditions.

The equipment consists of two sets of controls, one for the student, seated in the front cockpit of the airplane under the hood, the other for the instructor in the rear cockpit. The former set has a radio compass indicator and marker beacon flasher, and a frequency selector so that the student may tune to different frequencies and thereby receive the signals that would normally be heard from different frequency beacons. The student tunes to the frequency desired, which is indicated by visual signal on the instructor's panel. The instructor in turn throws a switch to correspond to this frequency which operates the correct keying device for setting up the radio range beacon signals with the corresponding station identification.

The instructor's control box includes, in addition to the frequency selector, a radio compass control, radio range beacon control, radio range volume control, ultra high frequency visual marker beacon light switch, a polarity reversing switch, marker beacon selector switch, and marker beacon volume control. Another unit mounted on a vibration absorbing gear contains an oscillator for producing the audio frequency used on the radio range beacon and instrument landing system. A second oscillator provides audio frequency for the audio marker beacon. This unit also contains the keying device for reproducing the beam of five radio range beacons and four audio frequency marker beacons. The equipment is so constructed that it can easily be placed in any type airplane and can be transferred from a primary trainer to a Bomber in a few minutes' time.

With this type trainer, a pilot may secure the necessary flying time and at the same time become proficient in the instrument flying and landing systems so essential for safety in modern flight.

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AN EXCITING INITIATION INTO THE CATERPILLAR CLUB

Initiations into the mythical Caterpillar Club having become a rather commonplace occurrence within recent years, it seems that nowadays most of those joining this Order have very little to say regarding their great adventure - their experience and reactions while taking leave of their airplanes in the extreme emergency and trusting to their parachutes to ease them down safely to terra firma.

Once in a while a report comes in from a new member which narrates a story of compelling interest. Such a report was recently received from Flying Cadet Lloyd Eyre, of the 49th Bombardment Squadron, GHQ Air Force, Langley Field, Va.

Cadet Eyre was flying in a Bombing plane at 10,000 feet altitude over Denbigh, Va., and was accompanied by Private Marvin S. Cranfill, of the same organization. He states that he had banked the airplane to the right slightly, and then nosed down about 25 degrees into a power-on dive. "The airspeed slowly increased to 220 miles per hour," he said, "at which time I eased the throttles back to full off position. As I did that, the rudder pedals started vibrating at a high rate of speed. Knowing the plane was in a dangerous condition, I pulled back steadily on the stick to try to level up, but the elevators didn't seem to have much effect. After six or seven seconds, during which the vibrating got worse, everything seemed to let loose. I didn't know it then, but the rear half of the fuselage had snapped off right through the rear cockpit and thrown my passenger, Private Cranfill, out into space.

The part of the plane I was in whipped over to an upside down position. As it did so, all I can remember is hearing what sounded like glass breaking, and the ship vibrating terrifically before I passed into unconsciousness with a hopeless sickening feeling. It seemed to me that I instantly came to and realized that I was whirling dizzily in an inverted spin. Actually I had fallen about 3,000 feet with the wreckage before regaining consciousness, during which time the wings had snapped off just beyond the motor mounts. But I didn't know the plane had gone to pieces. I thought it was still all intact, except possibly the rudder.

I haven't any odea what speed the motors were turning at this time. I seemed to be spinning so fast I couldn't see anything. All I could think of was to get out of the plane and get out quick. Due to being pressed against the hood with considerable force, I had a little trouble reaching the latch. When I pulled it, the hood opened easily. Then when I reached down and unlatched my safety belt, I shot out of the cockpit like a rocket. I went so fast that I can't remember leaving the plane at all. The next thing I knew was that I was out in space, spinning in every conceivable direction, with my arms and legs outstretched to the limit. After a second or two, I tried to bring my right hand over to pull the rip cord. But it wasn't as easy as that. I could bend my arm at the elbow, but I seemed to be helpless in getting my hand across my chest.

I tried once, then twice, and the third time I was getting a little excited. I managed to get my hand where the ripcord should normally be, but it wasn't there. Then I made a frantic effort and reached clear around under my left arm. It was there alright and, believe me, I got it. I yanked it with such force that it flew out of my hand as it came free and went sailing off to one side through space.

I was watching it go, with a satisfied gleam in my eye, when all of a sudden, without any warning, I got jerked up with a terrible jolt. For a second it took all the energy out of me. I was just hanging there limp. Then I looked up, and there was the good old chute rippling in the breeze and working perfectly. I looked on past it to see if I could see the plane anywhere. I can't describe the strange feeling I had when I saw thousands of small pieces, none of them over two or three feet in diameter, hurtling down through the air.

I had cleared the plane at about 6,000 feet, and my chute opened at about 5,000 feet. But I didn't know then that the main piece, the piece I had been in, hit the ground about the time my chute opened. I sat there in a daze for a little while, wondering what had really happened. I had been thrown clear out of the zone of falling pieces, so I didn't have to worry about anything hitting my chute.

Then with a flash I remembered my passenger. Where was he? I looked up, and there he was about 4,000 feet above me, safely riding his chute down. I felt better then and relaxed a little. Then another thought flashed through my mind, and I fairly froze. Where was I going to land? Was I going to come down in water? I had just been flying over the James River a few minutes before. The thought made a cold chill run through me. I finally managed to bend my neck and look down. What a relief that was to see good dry ground below me.

Again I relaxed, and as I looked around I saw cars stopped along the roads and people standing out beside them. Apparently they were watching the excitement. Then I noticed my chute wasn't behaving very well. I was swinging violently from side to side, describing an arc of about 90 degrees, with me as the pivot. I wondered if there was any chance it would go so far over that it would fold up. Each time it would start swinging from one extreme position to the other the inside edge of the chute would sort of cave in. Several times it swung so far over it scared me. I was still a long ways from the ground, and I didn't want it to fold up yet. So I reached up and took hold of the lines and started see-sawing against the swinging motion. That worked fine. Within a few seconds I had it quieted down nicely. And then without any warning, it suddenly started swinging crossways to the way it had been going.

I reached around and got hold of another set of lines and stopped the swinging. But each time I would stop it one way, it would start the other way. I looked down, and we were still a couple of thousand feet up. It seemed that we were just hanging there in space, rocking. My arms got so tired I couldn't pull any more, so I gave it up as a bad job and let it rock. Strange, but it didn't seem to rock very much after that.

Then I looked down again. I was about a thousand feet high now, and I could see I was falling pretty fast. I looked to see where I was going to land. I was headed straight for the middle of a heavy patch of timber. I couldn't tell which way I was drifting, so I pulled down on one side of the chute to try to guide it over toward the edge of the timber. I was down to three or four hundred feet now, and my efforts at guiding the chute hadn't helped at all, so I let go of it. As I looked down, those tree tops looked like big needles sticking up. I wondered which one I was going to hit. They were so thick I didn't think it possible for the chute to go down through them. But luck was with me 100%, and I came sailing down through an opening not much bigger than the chute. I was trying to look out for tree limbs, but they flashed by so fast I couldn't see them. Then with a bang I hit the ground and fell over in a heap on a carpet of pine needles."

Cadet Eyre stated that outside of a couple of very sore thigh muscles for several days he experienced no ill effects from the parachute ride. His nose received rough treatment and he sustained minor cuts and bruises before he got out of the plane.

Private Cranfill stated in his official report of his parachute jump that when he was thrown out after the fuselage broke at the rear cockpit he was surprised to find himself in the air, as he had tried to open the cockpit enclosure and could not do so. "My first thought upon finding myself out in the air," he said, "was to get my chute open. This was accomplished quickly, although I was jerked severely when it opened. My next thought was to find the ship, and I saw it falling in numerous pieces. As I neared the ground I thought about landing with my legs and body as limp as possible so as not to break any bones. I also tried to slip my chute so as to land in an open space, but failed in this and landed in a tree. I suffered no ill effects or injuries due to the jump."

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PICK-UPS FROM ADVANCED FLYING SCHOOL

Colonel Eugene H. Lohman, Air Corps, who was stationed at March Field, Riverside, Calif., has been assigned at Kelly Field, Texas, as Assistant Commandant of the Advanced Flying School. He replaces Major Wolcott P. Hayes, Air Corps, who has been assigned as Air Officer of the Fourth Corps Area.

The anxiety of the students to be away on the extended avigation flight to which they have looked forward throughout the year of their training was strained somewhat when continued rains held them at Kelly Field for several days. However, the long awaited break has come and they are now testing their instructor's ability - and patience - to teach them how to find, unaided, their way from here to there and back.

The complete reorganization of the post has been completed and, with the exception of routine troubles of housing, messing, etc., the post is once more operating in normal fashion. Training operations were suspended for one day only - Pay Day - so as not to interfere with the limited time available for the amount of flying necessary to graduate the present class on the scheduled date.

Barring unforeseen interference, the present class at Kelly Field will graduate on the 7th of October. This early date was necessary by reason of the fact that room must be made for the incoming students from Randolph Field, they being scheduled to graduate from the Primary Flying School on October 10th and to report to the Advanced Flying School immediately thereafter.

A REVIEW FOR SERGEANT HERBERT CASSETY

On August 31st, Albrook Field, Canal Zone, had its first review in honor of a retiring enlisted man. Sergeant Herbert Cassety, 24th Pursuit Squadron, took a review of the 16th Pursuit Group parading in his honor. The News Letter Correspondent, Albrook Field, states: "We hereby extend heartiest congratulations, wishing him a long retirement and a happy one."

55TH PURSUIT COMPLETES AERIAL GUNNERY

Establishing a record of 81.9 for average individual score, the 55th Pursuit Squadron, 20th Pursuit Group, Barksdale Field, La., returned from Shushan Airport in New Orleans as the first squadron in the Group to complete aerial gunnery for the year.

Firing from September 2nd to September 10th, the 55th formed the advance echelon for the camp, held this year at the Shushan Airport for the first time. During the month, firing will have been completed, with the 79th and 77th Squadrons following in that order.

Pilots of the Squadron, under the command of Major Armin F. Herold, left Barksdale Field on September 1st, flying to Shushan via Galveston, where a short stop was made for lunch and servicing. Completing the flight to New Orleans early in the afternoon, the flying personnel found a permanent camp set up and ready for occupancy, the ground echelon having made the trip on August 31st and September 1st, with an overnight stop at Baton Rouge, La.

Firing started on the morning of September 2nd with the first mission scheduled at 7:00 a.m. Although an intense schedule was necessary to complete training, and cancellation of seven missions due to rain further handicapped the personnel, the Squadron was able to fire six and one-half days of the ten, and was able to qualify fifteen men and fulfill the training requirements for formation firing. Led by Lieut. William Eades, Air Reserve, Squadron Armament Officer, with a record of 141, the fifteen pilots established an average mark of 81.9 for record score, individual, and 74 for formation firing.

During the firing periods, the 55th fired a total of slightly over 25,000 rounds of ammunition during 71 missions and 68 hours of flying. Ninety-three tow targets were used, towing time reaching slightly over 90 hours. During the firing period, a total of only eight stoppages was reported, and only 19 targets were lost due to failure of release or towing mechanism and shooting of rope, cable or release. A tremendous improvement in getting targets successfully off the ground and onto the tow cable was shown over past gunnery missions, due in a great degree to a new system of releasing targets developed by Staff Sergeant Arthur King, Armament Sergeant. Only five targets failed to function perfectly due to faulty functioning of the cable and release, many times that number being an average figure for former years.

A fuller explanation of Sergeant King's release method will be offered after further test by the remainder of the Group.

Although a section of the camp had to be moved due to the failure of a drain on the field, which allowed a heavy rain to inundate the officers' area to the depth of 12 to 15 inches, the 30-day camp established by the ground echelon proved satisfactory practically in all particulars, and the permanent personnel remained with only a few changes for the remainder of the month.

The 55th returned direct by air on September 10th, arriving at Barksdale Field about 4:00 p.m. The training camp was considered highly successful by all concerned, and the scores, considering the lack of comparative figures due to the new method of scoring and shooting, were believed to be well up in the lead when data on other squadrons become available.

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FIELD EXERCISES BY 90TH ATTACK SQUADRON

The 90th Attack Squadron, Barksdale Field, La., under the command of Captain William N. Amis, Air Corps, and consisting of 9 officers, 4 flying cadets, 82 enlisted men, and one medical officer and 11 enlisted men attached, departed for Fort Crockett, Texas, on September 7th to carry out squadron field exercises.

The movement was made in two echelons, air and motor vehicles. Twelve A-17 Attack airplanes, necessary spare parts, organization equipment, and a ground radio set were taken. Gasoline and oil were available in drums on the airdrome, and the airplanes were serviced by hand pumps.

The squadron base was approximately 100 miles from a general hostile front which had been established by a theoretical state of war. With ideal weather prevailing throughout the week's stay, two missions per day were flown against typical attack targets, with the objectives in some cases being 200 miles distant from the home airdrome. Machine guns, smoke, 17-pound fragmentation bombs, 100-pound demolition bombs, and mustard gas were the weapons used against the mythical enemy, with all armament loadings being simulated. A total of 206 hours was flown by the squadron in connection with the exercises. The return to Barksdale Field was made on September 12th, with no casualties reported other than those inflicted by the mosquitoes which undoubtedly had enlisted with the hostile forces.

In future war games it is hoped that these enemy activities will also be simulated.

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GENERAL BRETT ARRIVES IN PANAMA

Brigadier General George H. Brett, Air Corps, recently arrived on the Isthmus, coming from Bolling Field, D.C., and assumed command of the 19th Composite Wing, which embraces all Air Corps forces in the Panama Canal Department.

NIGHT LANDINGS BY INFANTRY SEARCHLIGHTS

A new type of light, portable infantry searchlight, has been received by the Hawaiian Division and issued on the basis of three to each infantry regiment. The lights are designed to provide night illumination for machine gun targets. They are equipped with either glass or metal reflectors and are mounted on collapsible tripods. The lights stand about 3½ feet above the ground and are activated by battery current. The batteries for each light when fully charged have a capacity sufficient to keep the light burning throughout the hours of darkness.

Since many of the outlying landing fields on Oahu are located reasonably close to the beaches defended by infantry regiments, it was considered desirable to ascertain whether the infantry lights would be of value to the Air Corps for operations from landing fields adjacent to the infantry. The Interbranch Lighting Board cooperated fully with the 18th Pursuit Group and sent three lights equipped with metal reflectors and three equipped with glass reflectors to Wheeler Field for practical test. The infantry regiments furnished the personnel to operate the lights.

One Attack Squadron and one Pursuit Squadron conducted the test, the Pursuit using P-12's and the Attack A-12's. Each pilot made one landing using the metal reflector lights, one landing using the glass reflector lights and one landing using all lights. In all, about ninety landings were made.

The new infantry portable searchlights were found to be entirely suitable for use in the Air Corps. One light is sufficient to illuminate a landing field. The News Letter Correspondent expresses the belief, however, that if used the lights should be employed in pairs in order to provide for any contingency incidental to the failure of one light. The beam lies close to the ground and has sufficient intensity to illuminate a strip varying from ten to fifty feet in width, and about 3/4 of a mile long. He does not believe that the Air Corps is interested in procuring any lights of this type but thinks that this item should prove of interest to Air Corps units occupying airdromes in the vicinity of ground units equipped with the new portable searchlights.

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NIGHT LANDINGS BY HAND SEARCHLIGHTS

In connection with night flying training of the 18th Pursuit Group, Wheeler Field, T.H., an exercise was conducted recently in which all pilots of all squadrons in the Group made several landings using only the so-called smokepots for illumination. These smoke pots consisted of an ordinary No. 2 tin can, two-thirds filled with waste saturated in a mixture of oil and gasoline. The cans are laid in a straight line about 100 yards apart and the limits of the field are illuminated by pairs of cans. Considerable experience with this simplified night landing system has conclusively indicated that the smoke pots furnish sufficient illumination for field operations.

The cans will always be available, and the necessary oil and gasoline is always on hand.

At the conclusion of the last smoke pot tests, an experiment was conducted in landing by hand searchlights. Ten ordinary pocket flashlights were used. They were laid on the grass with the light projected down wind. The lens ends of the flashlights were raised above the edge of the ground about 30°. The lights were visible only during the actual approach for a landing and could not be seen from directly overhead or from any angle except approaching into the wind. Numerous landings were made without difficulty. For actual operations a soldier could be stationed at each hand flashlight. The lights could be blinked on only when a plane was approaching and extinguished when the plane had passed the light. "Some of the pilots of the 18th Pursuit Group have suggested that the next night landing exercise be conducted using matches for illumination," says the News Letter Correspondent, and he adds: "It is understood that one squadron has gone a step further and is training lightning bugs."

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CHIEF OF STAFF VISITS SAN ANTONIO DEPOT

The San Antonio Air Depot, Duncan Field, Texas, enjoyed its first visit from General Malin Craig, the Chief of Staff. General Craig, accompanied by Major General Frank M. Andrews, Commanding General of the GHQ Air Force, Lieut. Colonel A.D. Surles and Captain C.B. Lee, of the Office of the Chief of Staff, Washington, visited the Army activities in San Antonio on September 18th in the course of an air tour of GHQ Air Force units in the South and West.

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Major Dushal D. Luchitch, of the Yugoslavian Air Corps, Air Attache to the Royal Yugoslav Legation at Washington, was a visitor at the San Antonio Air Depot on September 18th in the course of a visit to a number of Air Corps stations in the Eastern and Central States.

BIOGRAPHIES

COLONEL MARTIN F. SCANLON

Colonel Martin F. Scanlon, Air Corps, now serving on his third detail abroad as Assistant Military Attache for Air, was born at Scranton, Pa., August 11, 1889. He was a student both at the University of Pennsylvania and Cornell University.

Appointed a 2nd Lieutenant of Infantry on April 24, 1912, he was assigned to the 19th Infantry. On March 23, 1916, he was attached to the Aviation Section, Signal Corps, as an aviation student and reported to the Aviation School at San Diego, Calif., for training. He was rated a Junior Military Aviator October 28, 1916.

Transferred to the Philippine Islands, he was on duty from February to October, 1917, as pilot and Commanding Officer of the 2nd Squadron at Corregidor, flying Martin seaplanes.

Returning to the United States in November, 1917, Colonel Scanlon for a period of about a month received instruction on Deperdussin controlled Curtiss airplanes at Kelly Field, Texas. He was then assigned to duty at Fort Worth, Texas. In January, 1918, he sailed for duty overseas, and during the period from February to August, 1918, he took an advanced flying course with the British Royal Flying Corps at Scamptob, Lincolnshire, England, training on Avros and on Sopwith Pups, equipped with Gnome, LeRhone and Clerget engines.

From August 23 to September 16, 1918, he was on duty as pilot with the 91st Aero Squadron in the Toul Sector, flying Salmson, Spad and DH-4 planes. From September 16 to October 23, 1918, he was Commanding Officer of the Colombey-les-Belles Airdrome, flying Spads and SE-5 airplanes.

Colonel Scanlon was on duty as Corps Air Service Commander, 5th Army Corps, from October, 1918, to March, 1919, during which period he flew Salmson, DH-4, Spad and Avro planes. In March, 1919, he was also Corps Air Service Commander, 1st Army Corps. In the following month he was a student, Army Center Artillery Studies, Treves, Germany, and in May he was on duty at the 3rd Army Air Service Headquarters, Coblenz, Germany.

Upon returning to the United States in July, 1919, Colonel Scanlon was assigned to duty as Commanding Officer of Bolling Field, D.C., and he remained there until August, 1922, when he was assigned as student at the Air Service Engineering School at McCook Field, Dayton, Ohio.

Graduating from the Engineering School in August of the following year, he was assigned to the Militia Bureau (now National Guard Bureau), Washington, D.C., as representative to the Chief of Air Service.

In May, 1924, Colonel Scanlon was detailed to duty as Assistant Military Attache, American Embassy, Rome, Italy, and he remained on this duty until Aug. 1927, when he was detailed as a student at the Air Corps Tactical School, then at Langley Field, Va. Upon his graduation, he pursued the one-year course of instruction at the Command and General Staff School at Fort Leavenworth, Kansas, which he successfully completed in June, 1929. He was then again detailed as Assistant Military Attache, this time at the American Embassy at London, England. Completing four years on this duty, he was assigned to Scott Field, Belleville, Ill., for duty with the 15th Observation Squadron. He served with this organization until January 14, 1935, and thereafter, for exactly one year, he was on duty as Commanding Officer of Bolling Field, D.C.

On February 6, 1936, Colonel Scanlon returned to London, England, for another tour of duty as Assistant Military Attache for Air.

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LIEUT. COLONEL CARL SPATZ

Lieut. Colonel Carl Spatz, Air Corps, now on duty at 2nd Wing Headquarters, GHQ Air Force, as Executive and Inspector, was born at Boyertown, Penna., June 28, 1891. He was a cadet at the U.S. Military Academy March 1, 1910, to June 12, 1914, when he was graduated, commissioned a second lieutenant, and assigned to the 25th Infantry. He served with this regiment at Schofield Barracks, Hawaii, from October 4, 1914, to October 13, 1915.

Detailed to the Aviation Section, Signal Corps, he was a student at the Aviation School at San Diego, Calif., from November 25, 1915, to May 15, 1916, and on duty with the 1st Aero Squadron at Columbus, New Mexico, from June 15 to November 1, 1916. He served with the Punitive Expedition in Mexico under General Pershing.

Colonel Spatz was on duty at San Antonio, Texas, with the 3rd Aero Squadron, December 1, 1916, to May 5, 1917, and was in command of the 5th Aero Squadron from May 5 to July 14, 1917.

Ordered to duty overseas, he was in command of the 31st Aero Squadron in France from August 11 to September 17, 1917; at Aviation Headquarters, Paris, September 21 to October 15; at Chaumont, to November 15. He was in charge of training at the American Aviation School at Issoudun, France, to August 30, 1918, (except for one month spent at the British Front).

During the time Colonel Spatz was at Issoudun, organizing the Aviation School, it grew from a few buildings with no course of instruction outlined and no definite plan of organization, to probably the largest aviation school in the world. The greater percent of all American aviators and mechanics sent to the front were trained at this school. Practically every plan for the location of the field and buildings, for the methods of maintenance and supply of airplanes and for system and methods of instruction were drawn up by him or submitted to him for approval.

During the period from September 2 to 21, 1918, he served with the 2nd Pursuit Group at the front, most of this time as pursuit pilot in the 13th Squadron, and shortly before leaving he was promoted to Flight Leader. He participated in several aerial combats during the St. Mihiel Drive and Argonne Forest Fight, and was officially credited with having shot down two German planes.

Colonel Spatz was awarded the Distinguished Service Cross, the citation accompanying same being as follows:

"For extraordinary heroism in action during the St. Mihiel offensive September 26, 1918. Although he had received orders to go to the United States, he begged for and received permission to serve with a pursuit squadron at the front. Subordinating himself to men of lower rank, he was attached to a squadron as a pilot and saw conditions and arduous service through the offensive. As a result of his efficient work he was promoted to the position of flight commander. Knowing that another attack was to take place in the vicinity of Verdun, he remained on duty in order to take part. On the day of the attack west of the Meuse, while with his patrol over enemy lines, a number of enemy aircraft were encountered. In the combat that followed he succeeded in bringing down two enemy planes. In his ardor and enthusiasm he became separated from his patrol while following another enemy far beyond the lines. His gasoline giving out, he was forced to land and managed to land within friendly territory. Through these acts he became an inspiration and example to all men with whom he was associated."

Upon his return to the United States, Colonel Spatz served as Assistant Air Officer of the Western Department at San Francisco, from July 29, 1919, to July 13, 1920; as Commanding Officer of Kelly Field No. 2, from October 5, 1920, to February 4, 1921; as Air Officer of the 8th Corps Area from April 25, 1921, to November, 1921, and as Commanding Officer of the 1st Pursuit Group, Ellington F Field, Houston, Texas, and Selfridge Field, Mt. Clemens, Mich., from November 21, 1921, to September 24, 1924.

In April, 1919, Col. Spatz was in charge of a Flying Circus to cover the Western States and assist in the Victory Loan Drive. Flights were made in 27 cities, and the Circus was on the road 30 days. In October of 1929, he participated in the Transcontinental Reliability Test Flight.

Following his graduation from the Air Service Tactical School at Langley Field, Va., June 15, 1925, Colonel Spatz was assigned to duty in the Office of the Chief of Air Service. He commanded the Army airplane "Question Mark," when it established a new record in refueling endurance flights of 150 hours, 40 minutes and 15 seconds, in January, 1929.

Assigned to station at Rockwell Field, Coronado, Calif., in April, 1929, Col. Spatz commanded the 7th Bombardment Group to October 26, 1931; the 1st Bombardment Wing to March 15, 1933, at March Field, Calif.; and up to June 10, 1933, he was Executive Officer of the 1st Bombardment Wing. He then returned to duty in the Office of the Chief of the Air Corps, Washington, as Chief of the Training and Operations Division.

During the operation of the air mail by the Army Air Corps, early in 1934, Col. Spatz was on duty as Chief of Operations, G-3.

Following a year of duty as student at the Command and General Staff School, Fort Leavenworth, Kansas, Colonel Spatz, upon his graduation, June 30, 1936, was assigned to the GHQ Air Force at Langley Field, Va.

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AIR FORCE REORGANIZATION IN PANAMA

The News Letter Correspondent from Albrook Field, Panama Canal Zone, states that, due to the many problems peculiar to the Panama Canal Department, the reorganization of the Air Corps forces there has been somewhat behind that in the United States. "The problem has by no means been neglected, however," he says, "and after many months' intensive study and preparation it is contemplated that in the very near future reorganization will take place.

"As with the GHQ Air Force, the new plan provides for Base Squadrons for both Albrook and France Fields, and the regular tactical squadrons in addition.

"It is felt that the new set-up will have many advantages over the old, although of necessity there are disadvantages. Among the advantages hoped for are greater ease and centralization of Post Administration, such as guard, fatigue, etc., and greater ease of maintenance of equipment, since almost all men in tactical squadrons will be available, having few post duties.

"It will be interesting to see exactly what plan is eventually adopted, and we hope soon to be in a position to describe the Panama Canal's brand new Air Force."

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Captain Corley P. McDarment, A.C., was placed on the retired list September 30, 1936, for disability incident to the service. He was on duty at Pittsburgh, Pa.

THIRD ATTACK GROUP PARTICIPATES IN LOS ANGELES AIR RACES

By the Barksdale Field Correspondent

THE flight of eight A-17 Attack airplanes scheduled to participate in the National Air Races at Los Angeles, California, departed from Barksdale Field, La., at 7:00 a.m., Tuesday, September 1, 1936. The first stop was made at Midland, Texas, for gas, and the next was at El Paso, Texas, where the flight remained overnight. Total time to El Paso was five hours and forty minutes. The take-off from El Paso was toward the mountains, and the planes climbed over in straightaway flight, with ample room to spare.

The remainder of the flight to March Field, Calif., was uneventful, with the exception of occasional thunder storms. The arrival at March Field was made exactly at twelve noon. The total time from El Paso to March Field was four hours and thirty minutes.

On Thursday the members of the flight assembled in the flight commander's office for preliminary instructions. Two formations were practiced, one a column of flights and the other, the letters "LA." Also, a flight was made to Mines Field and return to look over the airport.

The Attack flight moved from March Field to Mines Field on Friday, September 4th, arriving at that place at 12:40 p.m., which was a few minutes prior to the arrival of the airplanes of the Ruth Chatterton Derby, officially opening the Races. One formation was flown in the afternoon.

On Saturday morning, while personnel of the Army flight were assembled in the headquarters tent for instruction, a sharp crash was heard in the parking area occupied by Army, Navy and Marine airplanes. The engine of a small racing plane had cut out over the field and the pilot, in attempting to land, had crashed into the propeller and radio mast of a March Field A-17 Attack plane. The racing plane was demolished but the pilot was uninjured.

When the flight took off on Sunday, moisture could be seen streaming from the propeller tips, and by the time it reached the end of the field patches of fog were encountered. After forming the letters "LA," the fog had rolled in until it was impossible for members of the flight to see the field, and it was necessary to break up and land at Dycer Field, Long Beach and March Field. The organization reassembled at Mines Field on Monday to complete the scheduled mission for that day, after which it returned to March Field.

After devoting Tuesday to maintenance, the Third Attack Group flight departed from March Field at 7:00 a.m., Wednesday, September 9th, for Albuquerque, New Mexico, by way of Boulder City, Nevada. Ten minutes out of March Field, one plane, piloted by Lieut. Guilmartin, was forced back to March Field by a loose collector ring. The remainder of the flight reached Albuquerque at 11:40 a.m., and departed for Hensley Field at 3:10 P.M., arriving at 8:00 p.m. The return trip to Barksdale Field was completed on Thursday morning. Lieut. Guilmartin arrived at Barksdale Field at 1:30 p.m., Thursday, having returned by the southern route and remaining overnight at El Paso.

The total time to and from March Field was 168 hours and 45 minutes. The total time at the Races was 71 hours and 5 minutes.

The morale of the enlisted personnel was high. Their duties were performed in a very satisfactory manner and, in addition to maintaining their own planes while at the Races, it was necessary for them to start and maintain the Barksdale P-26's.

The Department of Commerce radio facilities were used to great advantage on the return trip. Stations worked were: Kingman, Winslow and Albuquerque. Kingman was used from a distance of over 70 miles; Albuquerque and Winslow, from thirty to fifty miles.

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MISSIONS OF MERCY

During the past two months, the 18th Pursuit Group, Wheeler Field, T.H., was called upon to transport two appendicitis cases from the Kilauea Military Camp on Hawaii to John Rodgers Airport on Oahu. The seats on one side of an OA-3 Transport were removed and a stretcher securely and comfortably mounted for the patient. In both cases the patient was moved safely to Oahu and delivered by ambulance to Tripler Hospital for necessary medical attention.

On August 23, 1936, during the Hawaiian National Guard encampment at Kawaihapai, three men swimming off the north shore were washed out to sea by the current and were unable to get back. The 18th Group was called upon for assistance and promptly dispatched an A-12 to the rescue. The 26th Squadron was unable to reach the scene in time to deliver life jackets before one of the men had drowned. The other two reached the shore safely. The 18th Pursuit Group has been commended officially for its prompt and efficient rescue work.

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War Department orders, recently issued, direct 1st Lieuts. Reginald Heber, Jewell B. Shields and Cordes F. Tiemann, Air Corps, to proceed to Randolph Field, Texas, for duty upon the completion of their tour of duty in the Hawaiian Department.

NAVIGATION MISSIONS AT LUKE FIELD

Since the arrival of B-12A airplanes at Luke Field, T.H., the organizations of the 5th Composite Group have been active in conducting long-distance navigation missions. With the older type airplanes it was considered necessary to send an amphibian escort plane to accompany each cross-water flight. With the newer planes, which are capable of flight on one motor even though fully loaded, navigation flights up to sixty miles from land are permitted to be conducted, and sometimes even greater distances.

After a series of preliminary navigation flights to the northwest of Kauai and Niihau, the 5th Composite Group successfully executed an interception mission with the U.S. Army Transport REPUBLIC on September 7th. The transport was intercepted while approximately 175 miles from Makapuu Head, equivalent to a half day's steaming. The formation consisted of eight B-12A's, under the command of Major Idwal H. Edwards, Air Corps. First Lieut. John W. Egan, Air Corps, acted as navigator for the flight. The interception was scheduled for 2:00 p.m., Honolulu Standard Time, and was actually effected at 15 seconds past 2:00 p.m. After circling the transport at 1,000 feet, the planes returned to Luke Field.

Incidentally, one of the passengers aboard the transport was Brigadier General Barton K. Yount, the new Wing Commander and Department Air Officer.

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NEW LANGUAGE TO DESCRIBE AN AIRPLANE

Touching on the ferrying of the first of their C-33's from March Field to Patterson Field, Fairfield, Ohio, recently, the News Letter Correspondent from the last named station describes this cargo plane thusly: "In many respects she resembles a nice, stout, old lady, not fast on the turns but good on the straight-away, amiable and comfortable but commanding a certain respect and consideration."

Major J.G. Williams and Master Sergeant Cecil B. Guile were the pilots on the above mentioned ferrying flight. They reported that the automatic pilot functioned perfectly, and if the trip had not terminated when it did they would have become a couple of old "knob turners."

Extensive training is now being conducted with this first cargo carrier in order to qualify the personnel necessary to pilot the Fairfield Air Depot's "Silver Fleet." The News Letter Correspondent says: "The rapidity with which the new pilots learn to handle this type of airplane speaks well for their training and the qualities of the airplane itself."

ARMY TEST NAVIGATORS LAND AT BROWNSVILLE

Heralding a new era in the science of air navigation, the Air Corps flying laboratory landed at Brownsville, Texas, shortly before noon on September 24th, completing a trip across the Gulf of Mexico from New Orleans.

The purpose of the flight, which started from Wright Field, Dayton, Ohio, was to conduct extended tests on a combination of celestial and dead reckoning navigation equipment on which the Army Air Corps has been working for some time.

The crew of the big flying laboratory, a Douglas twin-engined airplane, report the tests successful and, although the data obtained during the flight have not been entirely reviewed, the results of the flight indicate that a tremendous step has been made towards the simplification of air navigation.

The Army personnel making the test flight include Captains S.M. Umstead, C.J. Crane, Lieut. T.L. Thurlow, Dr. S.M. Burka, Messrs. A.R. John and Lester Marks, all stationed at Wright Field, the Army Air Corps experimental station.

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AN AERIAL REVIEW AT ALBROOK FIELD

Brigadier General Halstead, Pacific Sector Commander, and Brigadier General George H. Brett, 19th Wing Commander, witnessed an aerial review at Albrook Field, Panama Canal Zone, on August 29th. The entire Pursuit strength of the Isthmus, plus O-19 planes of the 44th Observation Squadron, participated. General Halstead spoke from the ground to Colonel Phillips, who was leading the formation. General Halstead was visibly impressed with the ease and clarity of communication between plane and ground.

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Wing Commander A. Hepburn, of the Royal Australian Air Force, on a visit to several Air Corps stations in the United States on his return to Australia from a round-the-world journey, visited the San Antonio Air Depot, Duncan Field, Texas, on September 10th, and expressed great interest in viewing the workings of this Depot, especially in matters of shop, warehouse and hangar construction.

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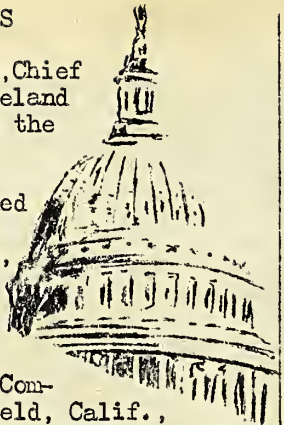
Upon the termination of their tour of duty in the Hawaiian Department, the following-named Air Corps officers, in accordance with War Department orders, will proceed to the stations named for duty:

First Lieuts. Douglas M. Cairns to March Field, Riverside, Calif.; John G. Fowler and Lewis R. Parker to Bolling Field, Anacostia, D.C.; Travis M. Hetherington to Chanute Field, Rantoul, Ill., and Carlyle W. Phillips and Earl F. Signer to Scott Field, Belleville, Ill.

WASHINGTON OFFICE NOTES



Major General Oscar Westover, Chief of the Air Corps, visited Cleveland on September 21st and attended the American Legion Convention.

Officers who recently returned from leaves of absence were Lieut. Colonel Robert L. Walsh, Major James A. Mollison, and Major Malcolm C. Grow, Medical Corps.

Colonel Clarence L. Tinker, Commanding Officer of Hamilton Field, Calif., was a visitor on September 25th during the course of an extended navigation flight.

Recent visitors to the Chief's Office were Majors Earl H. DeFord, Austin W. Martenstein and Ray A. Dunn, from the Air Corps Tactical School, Maxwell Field, Ala.; Majors James P. Hodges and Lawrence P. Hickey from Langley Field, Va.; Major John V. Hart, during the course of leave of absence from Kelly Field, Texas; Captain Milo N. Clark, during the course of an extended navigation flight from Randolph Field, Texas; and 1st Lieut. Ralph P. Swofford, Jr., during the course of a navigation flight from Wright Field, Ohio.

Lieut. Colonel William E. Lynd left for the West Coast on September 19th for the purpose of ferrying a plane eastward.

Major Charles Y. Banfill returned from a navigation flight to Bangor, Maine, on Sept. 27th.

Captain Mervin E. Gross returned September 27th from temporary duty at Wright Field.

Captain Robert V. Laughlin returned September 26th from a conference in New York City.

Major Edward V. Harbeck, Jr., of the Inspection Division, returned September 25th from detached service.

Captain Francis H. Vanderwerker, who was on temporary duty in the Chief's Office, returned to Wright Field.

First Lieut. William T. Hefley, from the Materiel Division, Wright Field, reported for temporary duty.

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AIR CORPS PERSONNEL NOTES

First Lieut. Albert W. Shepherd was retired from active service on September 30, 1936, for disability incident to the service.

First Lieut. Charles G. Goodrich, Langley Field, Va., was ordered to duty with the Air Corps in the Panama Canal Department, sailing from New York on October 30th.

First Lieut. David D. Graves is assigned to duty at Bolling Field, D.C., effective upon the completion of his tour of duty in the Panama Canal Department.

AERIAL DEMONSTRATION AT FORT BENNING, GA.

An item which may be of interest to readers of the Air Corps News Letter is the recent Aerial Demonstration at Fort Benning, Ga., which was given for the benefit of the senior class, U.S. Military Academy, and was participated in by the following units from Langley and Barksdale Fields:

20th Bombardment Squadron
13th Attack Squadron
37th Attack Squadron
79th Pursuit Squadron

The 20th Squadron, led by Major B.M. Giles, departed from Langley Field for Fort Benning on the afternoon of August 11th for participation in this demonstration. The formation was composed of nine B-10B airplanes, carrying 13 officers, 5 flying cadets and 18 enlisted men. The Squadron arrived at Lawson Field that afternoon at 5:45 o'clock. The Commanding Officer of the 2nd Bombardment Group, Lieut. Colonel Charles B. Oldfield, arrived from Langley Field the following day to witness the demonstration.

The bombing demonstration consisted of bombing an upright target by three individual flights of three planes each. Despite extreme cloudiness, which delayed "B" and "C" Flights in getting their bombs off on scheduled time and greatly increased the difficulty of the actual sighting operation, the results obtained were very satisfactory and may be outlined as follows:

FLT.	BOMBER	TYPE BOMB	ALTITUDE IN FEET	MEAN CIRCULAR ER.
"A"	Major Giles	300 lb.	10,000	12 mils
"B"	Lt. Glantzberg	600 lb.	7,000	18 mils
"C"	Lt. Sutherland	1100 lb.	3,600	20 mils

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WAR DEPT. ORDERS AFFECTING AIR CORPS OFFICERS

CHANGES OF STATION: To Randolph Field, Tex.: 1st Lieut. Sydney D. Grubbs, Jr., upon completion tour of duty in Hawaii.

To Boston, Mass.: Captain Milton M. Murphy, March Field, for duty with Organized Reserves of 1st Corps Area.

To Selfridge Field, Mich.: Major Benjamin B. Cassiday, from Primary Flying School, Randolph Field, Texas.

To Wichita, Kansas: 1st Lieut. Samuel R. Brentnall, from Mitchel Field, N.Y., for duty as Air Corps representative at the Stearman Aircraft Factory.

To Hqrs. 1st Corps Area, Boston, Mass.: Captain Raymond R. Brown, from duty as student, Harvard Graduate School of Business Administration, Cambridge, Mass.

To Kelly Field, Texas: Colonel Eugene H. Lohman, from March Field, for duty as Assistant Commandant, Advanced Flying School.

RELIEVED FROM DUTY WITH AIR CORPS: 2nd Lts. Willard L. Egy and Wm. S. Van Nostrand; former assigned to 10th Infantry, Fort Hayes, O., and latter to 1st Cavalry Division, Fort Bliss, Texas.

OBITUARIES

September proved a rather unfortunate month for the Air Corps in the matter of aircraft accidents, three of them proving fatal and resulting in the loss of six lives.

On September 12th, while flying near March Field, Calif., 2nd Lieut. James T. Carter, Jr., Air Reserve, pilot, and Private Milton J. Cutting, mechanic, were killed as the result of a crash.

On September 16th, Captain Francis P. Booker, veteran Air Corps pilot, who was attending the Air Corps Tactical School at Maxwell Field, Montgomery, Ala., was so severely injured in a crash near the field that he died at the station hospital the following morning.

On September 23rd, during the course of a night flight, 2nd Lieut. Jack J. Neely, Air Corps, piloting a bombing plane from Mitchel Field, N.Y., with Corporal Angelo Mozzacco as bomber and Private, 1st Class, Thaddeus F. Makuszewski as radio operator, crashed in a fog near Providence, R.I., all three men being killed.

Lieut. Carter, a native of Bowman, S.C., was born on February 25, 1909. He graduated with a B.S. degree in 1930 from the Citadel, Charleston, S.C., and was commissioned a Second Lieutenant in the Infantry Reserve. Appointed a Flying Cadet in the Army Air Corps, he graduated from the Primary Flying School, Randolph Field, Texas, October 14, 1933, and from the Advanced Flying School, Kelly Field, Texas, February 20, 1934, on which date he was rated "Airplane Pilot." He specialized in Pursuit Aviation.

Lieut. Carter was assigned to duty under his cadet status with the 95th Pursuit Squadron (later redesignated Attack) at March Field, Calif. A year later he was commissioned a Second Lieutenant in the Air Reserve, and he continued on active duty at March Field.

Private Cutting, of Hayward, Calif., enlisted in the Air Corps on June 8, 1934. He was also stationed at March Field.

Captain Booker, who was born at San Antonio, Texas, July 22, 1896, became affiliated with Army aviation during the World War. He attended St. Mary's College and San Anthony's College. After enlisting in the Quartermaster Corps, he transferred to the Aviation Section, Signal Corps, attended ground school at the School of Military Aeronautics, Austin, Texas, and received his flying training at Ellington Field, Houston, Texas. Upon the completion of his flying training he was, on September 18, 1918, commissioned a second lieutenant in the Aviation Section, Signal Corps, and assigned to active duty at Ellington Field. He remained on duty at this station until August 18, 1919, when he was honorably discharged from the service.

Passing the examination for appointment as an officer in the Regular Army, Captain Booker was commissioned a second lieutenant, Air Service, with rank from July 1, 1920, and assigned to the Primary Flying School at Carlstrom Field, Arcadia, Fla., to take a refresher course in flying. Upon graduating from Carlstrom Field, he specialized in Bombardment Aviation at the Advanced Flying School at Kelly Field, and he was rated an "Airplane Pilot" on August 4, 1921.

Captain Booker subsequently served at Langley Field, Va.; France Field, Panama Canal Zone; returned to Kelly Field, and was one of the original officers to be assigned to duty at Randolph Field when it was established in 1931. He served at the last named station until August, 1936, when he was detailed as student officer at the Air Corps Tactical School at Maxwell Field, Ala.

His survivors are the widow, three children and his mother, Mrs. Mary C. Booker, of San Antonio.

Lieut. Neely, who was a member of the Air Corps for less than a year, was born in North Dakota, February 4, 1911. Upon his graduation from the United States Military Academy in 1934, he was assigned to the Air Corps to undergo flying training. He completed the course at the Primary Flying School, Randolph Field, July 1, 1935; specialized in Bombardment Aviation at the Advanced Flying School, Kelly Field, Texas, and graduated therefrom on October 12, 1935, when he was rated an "Airplane Pilot."

Lieut. Neely's first duty assignment as an Air Corps officer was with the 99th Bombardment Squadron at Mitchel Field, N.Y., as Athletic Officer, Assistant Adjutant, and Supply Officer.

Corporal Mozzacco was born on April 21, 1910, at Punkston, Pa. He enlisted in the Air Corps on August 31, 1934, and served with the 99th Bombardment Squadron at Mitchel Field, N.Y.

Private Makuszewski was born at Schenectady, New York, February 18, 1908. He enlisted in the Army Air Corps June 19, 1931, and was stationed at Mitchel Field, N.Y., serving with the 99th Bombardment Squadron.

The Air Corps extends its sincere sympathy to the families of the deceased officers and enlisted men.

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TRAINING ACTIVITIES OF 77TH PURSUIT SQUADRON

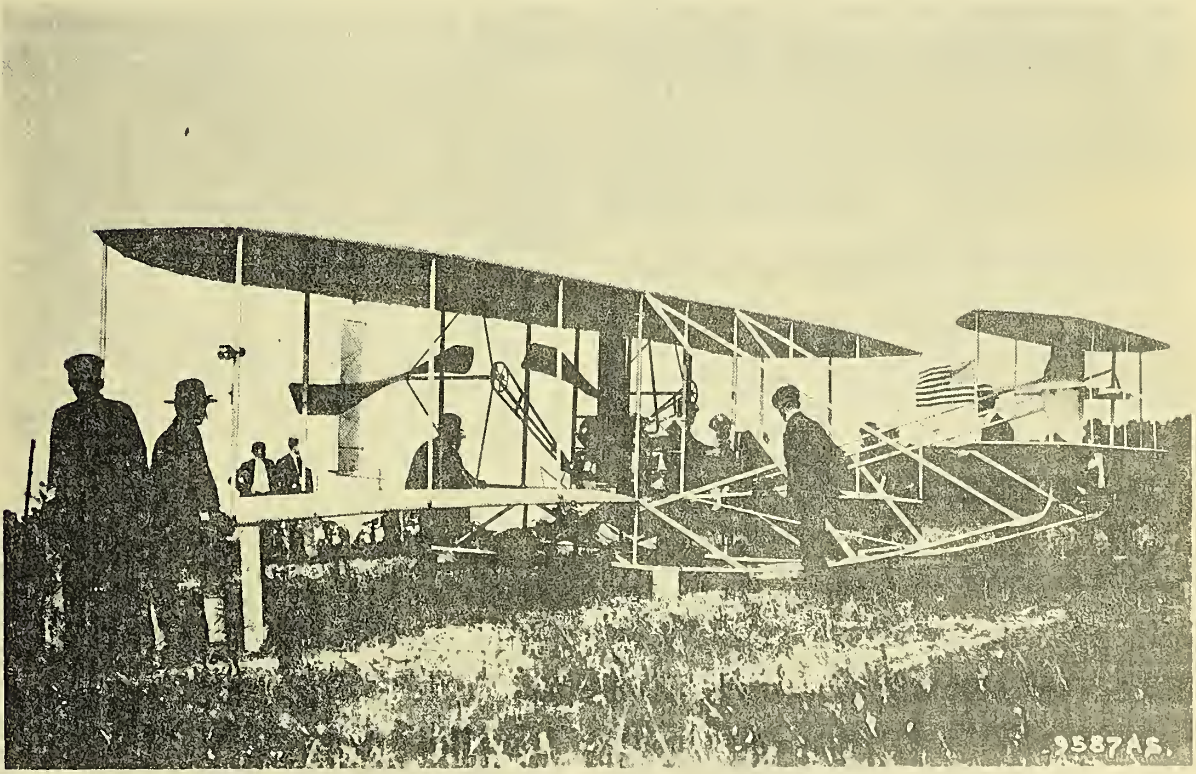
Operations for the 77th Pursuit Squadron, Barksdale Field, La., during the first half of September were devoted primarily to gunnery in preparation for the aerial gunnery maneuvers scheduled to be held in New Orleans, La., from September 21st to 30th. Other phases of training during this period, however, were not neglected, and unit navigation, both day and night, individual combat and unit combat exercises received a good share of the time. Intensive training in instrument flying, and miscellaneous missions were also carried out.

Major Carlton F. Bond, Air Corps, acted as temporary squadron commander during part of the period when Major Claire L. Chennault was on leave. Five cadets of the 77th flew with the 79th Pursuit Squadron to Phoenix, Arizona, in connection with presentation of the Luke Trophy.

AIR CORPS

NEWS LETTER

Issued by the Chief of the Air Corps
Washington, D. C.



VOL. XIX OCTOBER 15, 1936 NO. 20

VOL. XIX **Air Corps News Letter** NO. 20

Information Division
Air Corps

October 15, 1936

Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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VERSATILE PURSUITERS
By 1st Lieut. D.N. Motherwell, Air Corps

VARIED assignments have fallen to the 79th Pursuit Squadron of Barksdale Field, Shreveport, La., in quick succession lately. Winners of the Frank Luke, Jr. Memorial Trophy for best Pursuit Gunnery during the past year, the 79th pilots were ordered to Phoenix, Arizona, for the presentation of the Trophy.

Captain Charles G. Pearcy, Squadron Commander and leading gunner, led the Squadron in three 6-plane flights of P-26's. Eight enlisted members of the Squadron were ferried in two transport planes. Departing from Barksdale Field at 7:00 a.m., the Squadron arrived over Phoenix, Arizona, at 6:30 p.m., September 2nd. As a "Beau Geste" to the American Legion of Arizona, holding their convention in Phoenix, the eighteen planes formed a huge letter "A" as they passed over town. The sun was low and the beautiful coloring of the sky made a most effective background. The welcome was overwhelming; the city was ours as soon as we landed. Western hospitality and the generous efforts of Mr. A. Lee Moore, well known local pilot, assured the Squadron a most enjoyable visit.

On the following day, the eighteen planes demonstrated Pursuit maneuvers for thirty minutes over the city, and Captain Pearcy fell out of the formation long enough to drop flowers on the Frank Luke, Jr. Memorial Statue in front of the State Capitol. Mr. T.T. Brooke, Department Commander of the American Legion, assisted by the Governor of Arizona, made formal presentation of the Trophy immediately afterward.

The ceremonies concluded, Captain Pearcy departed with "A" Flight for March Field and the National Air Races at Los Angeles. The Air Race Committee expressed the desire that the entire Squadron participate, but shortage of planes at Barksdale Field made this impracticable. First Lieut. James A. Ellison led "B" and "C" Flights back to Barksdale Field on September 4th.

At the National Air Races, "A" Flight fell heir to a large responsibility. The little flight of six was called upon to uphold the traditions of Army Pursuit in competition with eighteen fast Grumman "Fighters" of the Navy, eighteen U.S. Marine "Devil Dogs" and a composite Army Attack Squadron of eighteen Northrop A-17's. "A" Flight, billed as the "U.S. Army Air Corps Sextette from Barksdale Field," flew a daily twenty-minute mission of Pursuit maneuvers and combat exercises in close "Vee" and string formations with individual acrobatics.

Brother officers from March Field expressed a hearty approval of our work. Lieutenant-Commander C.D. Glover, leader of the eighteen Navy "Fighters," came searching through the crowd to congratulate us for an "excellent performance."

Upon our return to Barksdale Field from March Field on September 8th, a tired "A" Flight climbed out of their collective cockpits. Smilingly the others greeted us - "You are ordered into the field at Shushan Airport, New Orleans, La., immediately for ten days' aerial gunnery!"

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SEVEN NEW OFFICERS FOR MARCH FIELD

Seven members of the command at March Field, Riverside, Calif., dedicated themselves to a lifetime of service with the United States Regular Army Air Corps on October 2nd, when they took their oath of office as Second Lieutenants in the regular service. This was administered by First Lieut. Hunter Harris at March Field Headquarters.

Reserve officers receiving commissions were Jack Lindley Randolph and Leslie Raybold, both serving as Privates, Air Corps, with the Fourth Air Base Squadron, March Field, and five Second Lieutenants, Air Reserve, on active duty. These were Douglas W. Smith, Adjutant of the 34th Attack Squadron; Paul Engberg Todd, also of the 34th; Boyd Hubbard, Jr., of the 19th Bombardment Group; Frank R. Cook, of the 34th Attack Squadron, and John A. Hilger, Assistant Communications Officer of the 95th Attack Squadron.

Commenting on the award of regular commissions to these seven pilots, Brigadier General Delos C. Emmons, Commander of the First Wing, General Headquarters Air Force, stated that they were a fine lot of men. He regretted that there were not available more regular commissions for other splendid Reserve officers.

"It may be truthfully stated," says the March Field Correspondent, "that the choices were popular ones, as everyone at March Field seemed to be happy that these seven men were named."

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ENLISTED PILOTS LEAVE BOLLING FIELD

The piloting personnel of Bolling Field, D.C., was decreased by the departure of three enlisted pilots for duty at other stations. "Their genial personality and their hearty cooperation will be sincerely missed by all with whom they have worked," says the Bolling Field Correspondent.

Sergeant Herman E. Hurst, Second Staff Squadron, was placed on detached service at the Middletown Air Depot, Pa., where he will receive valuable experience ferrying aircraft and supplies. Privates Franklin K. Paul and John A. Way, both of Base Headquarters and 14th Air Base Squadron, will receive appointments as Second Lieutenants, Air Reserve, on active duty, to report to their stations by October 15, 1936. Private Paul departed for Langley Field, Va., where he will report to the Commanding Officer and then proceed to the Panama Canal Zone. Private Way departed for Barksdale Field, Shreveport, La., where he will be assigned to a Pursuit Squadron.

The personnel of Bolling Field extend their best wishes and hope that these men have gained valuable experience during their stay at this field.

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COMBAT MANEUVERS IN MARYLAND

Flight "A" of the 16th Observation Squadron, stationed at Langley Field, Va., arrived at Bolling Field on September 19th and was encamped there for three weeks while performing cooperative missions with the Infantry from Fort George G. Meade, Md., and the Field Artillery from Fort Hoyle, Md. Both of the line organizations were having combat maneuvers in nearby Maryland.

The equipment of Flight "A" consisted of two O-25C airplanes, a field radio set and five trucks. The personnel comprised two pilots, Captain O.L. Beal and Lieut. B.W. Armstrong, and a detachment of 20 enlisted men, including radio operators, airplane mechanics, and truck drivers. The enlisted men were quartered in barracks at Bolling Field, and their equipment was set up in field tents at the south end of the hangar line. They operated their own communications system and set up their own radio antenna on the flying field.

During the time the line organizations were on maneuvers, the pilots performed cooperative radio communications and observation missions daily, one with the Infantry and the other with the Field Artillery.

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GROUND BROKEN FOR NEW AIR DEPOT

The 7th Bombardment Group, commanded by Colonel C.L. Tinker, participated in the ground-breaking ceremony on September 8th at the site of the Army's newly acquired $7,000,000 Air Depot, with location at Sacramento, Calif.

The Group, composed of 18 Martin Bombers, flew from Hamilton Field to Mather Field, landing at 9:00 a.m., and was joined at 9:10 by the 17th Attack Group, commanded by Major L.C. Mallory, and at 9:20 a.m. by the 19th Bombardment Group, commanded by Lieut. Colonel Hubert R. Harmon. Both groups were composed of nine planes each and were from March Field, Riverside, Calif.

At 10:55 a.m., the Wing, commanded by Colonel Tinker, took off, assembling at 1500 feet to fly directly to the site where several thousand spectators were congregated, thrilling all with beautiful formation flying and the never-to-be-forgotten "Pass in Review."

On the ground, high officials of both civil and military circles were very much in evidence. Governor Merriam; General Henry H. Arnold, Assistant Chief of the Air Corps; General Delos C. Emmons, Commanding the 1st Wing, GHQ Air Force, were just a few of the notables present. The Governor, as Executive of the State of California, touched off the charge of dynamite to turn the first dirt of the Air Corps' latest contribution to the West Coast's defenses.

Following the aerial demonstration, the planes of the 17th Attack and 19th Bombardment Groups were flown to Hamilton Field to be refueled and made ready for the flight back to their base at March Field. The 7th Bombardment Group landed at Mather Field, the personnel being transported to Sacramento, where the officers enjoyed a luncheon at The Sutter Club, and the enlisted personnel were entertained at the Hotel Sacramento.

The 7th Group left that afternoon for Hamilton Field. Thus came into being another spike in the defenses of this nation.

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The National Air Races held in Los Angeles on September 4, 5, 6 and 7, proved to be the greatest held since their inception. The largest "gate" ever to attend these Races witnessed this affair during these four days. The Races daily attracted crowds estimated at 80,000 people, making the total attendance for the four days approximately 320,000.

THE PHOTOGRAPHIC TRAILER

By the Materiel Division Correspondent

A new Photographic Trailer has been developed at the Materiel Division, Wright Field, Dayton, Ohio. It is especially equipped to make possible the obtaining of completed photographs in a very short time and serves an important purpose because of the ease with which it may be transported to any location where photographs are desired and where there is no laboratory for developing and printing negatives.

The Trailer has been under development for the past six months. It is 16 feet long by 6 feet wide by 8 feet high and weighs 2840 pounds. It is divided into two compartments; one for the development of roll films, cut films and the drying and sorting of prints, and the other, for printing. The main equipment within the trailer is the film developing apparatus, film dryer, printer, plotting table, and the usual accessories, such as timers, etc. The film developer, dryer, printer, and plotting table are newly designed equipment.

The electric power for the Trailer is furnished by a small generating plant of light weight. The water supply is obtained by the use of city water when it is available. More often, a lake or small creek is the only source of water supply, and is furnished to the Trailer through a small electric pump. Where no water is available, a reserve water tank in the Trailer furnishes the supply.

The roll of film goes through the following cycle of operation: It is delivered to the Trailer from the airplane and is developed in a light-tight compartment. It is then run through a drying machine, after which it is numbered on the plotting table. From this room, it is taken to the printing room and printed on a special light weight printer. From the printer, the prints go through the regular process of developing, rinsing, and fixing. After the prints have been sufficiently fixed, they are placed in a special washer and from the washer are transferred to a tray located in the dividing wall of the Trailer. This tray is so hinged that it pivots in a window-like arrangement from one compartment to the other. Water from the prints drain back into the washer, after which the tray is swung so that they may be taken off in the opposite compartment where the operator either places them on ferrotype plates or blots them before putting them on the drying trays. After the prints have dried, they are sorted and ready for delivery.

All single lens camera work may be carried on within the Trailer; also, the laying of small mosaics. In case of emergency, or where the saving of time is important, the film is dropped in a parachute container from the airplane, is picked up and carried to the Trailer for development. The shortest time on record required for this process was an instance where exposed cut film was dropped from the airplane by parachute container and in five minutes after it was received by the photographer, one print was delivered. In another instance, a roll of exposed aerial film was delivered to the Trailer and the roll was completely processed and one print from each of 40 negatives was made and dried in one hour and 15 minutes.

The ventilating system in the Trailer is taken care of by two blowers, one in each compartment. These blowers pull the air through an air cleaner, thereby keeping the air fresh at all times.

The Trailer development, prosecuted under the direction of Brigadier General A.W. Robins, Chief of the Materiel Division, will undoubtedly be a valuable addition to Air Corps equipment for Corps and Observation photography where a transportable laboratory is required.

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SEPARATION OF FRANCE FIELD AND AIR DEPOT

The News Letter Correspondent from France Field, Panama Canal Zone, states that to former members in good standing of the France Field Officers' Club it may be of interest to note that the much discussed separation between France Field proper and the Panama Air Depot has at last been effected, with few traces left of the former liaison. The Officers' Club, the Post Exchange, the Post Office, the Surgeon's Office, the Theatre and the Athletic Field are the only interests that are retained as common to the two independent organizations.

Lieut. Colonel Vernon L. Burge commands the Panama Air Depot as an independent departmental unit, and Lieut. Colonel Richard H. Ballard is in the same manner in command of France Field.

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CHIEF OF STAFF INSPECTS HAMILTON FIELD

The Chief of Staff, General Malin Craig, accompanied by an official party composed of Major General Frank M. Andrews, Commander of the GHQ Air Force; Brigadier General Delos C. Emmons, Commander of the First Wing, GHQ Air Force; Colonel Follett Bradley, Lieut. Colonel A.C. Surles, Major J.W. Persons and Captain M.J. Lee, with a crew of three enlisted men, landed at Hamilton Field, San Rafael, Calif., on the afternoon of September 20th, after a flight from Clover Field, Santa Monica, Calif. After making an informal inspection and observing the personnel of the base in their routine duties, General Craig and his party, less General Emmons, left on September 22nd enroute to Salt Lake City, Utah. General Emmons flew to his station at March Field, Calif.

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PHOTOGRAPHIC ACTIVITIES AT BOLLING FIELD

The Photographic Section at Bolling Field, D.C., recently completed an aerial mosaic map of the District of Columbia and vicinity. It was assembled in the form of a circle and included all the territory within a radius of eighteen miles from the Post Office Building.

In the original form, the map was nine feet in diameter and was composed of 872 separate 7" by 9" prints. The photographs were taken in eleven flying hours, and the map was completed in eleven days by ten men working fourteen hours per day. Several copies of the map were made, and the original was delivered to the Office of the Chief of the Air Corps.

At the present time the Photographic Department of Bolling Field is engaged in photographing the Susquehanna River basin for use in flood control development. The territory from Havre de Grace, Md., to Sayre, Pa., and from Sunbury, Pa., to Altoona and Emporium, Pa., is to be covered by a series of overlapping photographs. All towns and cities along the river front are to be covered by vertical mapping photos, taken at low stage and again at flood stage of the river. It is estimated that about sixty flying hours will be required to complete the mission.

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REPRESENTATION IN NEW CLASS AT RANDOLPH

Texas, the Lone Star State, has always been a close rival to California in the matter of representation of native sons in the various classes entering the Air Corps Primary Flying School at Randolph Field, Texas. It has been the rule rather than the exception for the State of California to take the lead, although on several occasions Texas forged to the front by a narrow margin.

In the new class which has just started at Randolph Field, Texas is far in the lead with a total of 20 students, followed by California with 10 native sons and Illinois with nine. The cities of Chicago, Ill., and Washington, D.C. are tied in student representation, each having four.

The list of Flying Cadets entering the October, 1936, Class at the Primary Flying School appears on page 6 of this issue of the News Letter. The list of West Point graduates who are members of this class was published in the News Letter of August 15, 1936.

NEW CLASS AT THE PRIMARY FLYING SCHOOL

The October, 1936, class at the Air Corps Primary Flying School at Randolph Field, Texas, comprises a total of 164 students. Of these, 61 students are Second Lieutenants of the Regular Army who graduated from the United States Military Academy on June 12, 1936, and were assigned to duty with the Air Corps for flying training; 95 are candidates from civil life; 4 are enlisted men of the U.S. Army Air Corps and four are enlisted men of other branches of the Regular Army.

The civilian and enlisted students will undergo their training under the status of Flying Cadets.

The course at the Primary Flying School is of eight months' duration and is divided into the Primary and Basic stages, each being over a four-month period. It is the general rule that students who pass successfully through the primary stage - the first four months of the year's course - also make the grade in the Basic stage and in the four months' advanced course at the Advanced Flying School at Kelly Field, Texas.

Graduation from Kelly Field means the award of the "Wings" and the rating of "Airplane Pilot." The officer graduates are transferred to the Air Corps and are added to the piloting personnel of this combat branch of the service.

With respect to the Flying Cadet graduates from the Advanced Flying School, it was the practice in the past to assign them to active duty for the period of one year under their Cadet status with Air Corps tactical units, and at the end of that time commission them second lieutenants in the Air Reserve and assign them to extended active duty with Air Corps tactical units under their status as Air Reserve officers.

Nothing definite can be stated at this writing as to what the status will be of those Cadets of the present class who are fortunate enough to make the grade and will graduate next October from the Advanced Flying School. Legislation was enacted at the last session of Congress providing for an increase in the number of Air Reserve officers to be placed on extended active duty. Just how many Reserve officers will be placed on extended active duty during the Fiscal Year 1938 depends upon the amount of funds there will be appropriated during the coming session of Congress for this purpose. No decision has therefore been made by the War Department as to whether the Flying Cadet graduates will, as in the past, be assigned to extended active duty with tactical units as Flying Cadets, or be commissioned Second Lieutenants in the Air Reserve immediately upon graduation and assigned to extended active duty with Air Corps tactical units as Reserve officers.

ADDITIONAL OFFICERS FOR THE AIR CORPS

A recent War Department announcement is to the effect that, under authority of an Act of Congress, approved August 30, 1935 (Public No. 408 - 74th Congress - known as the Thomason Act), the following, listed alphabetically, are appointed as Second Lieutenants in the Air Corps, Regular Army.

Under the above quoted act, the 50 appointments are apportioned to the various arms, but since none of the group of 1,000 Reserve officers authorized for active duty for one year with the Regular Army could be eligible for appointment prior to July 1, 1937, the entire 50 officers are awarded to the Air Corps for this year.

The list follows:

Allen, Brooke Empie	Wilmington, N.C.
Aring, Wilbur Walter	Montgomery, Ala.
Black, Robert Kirkland	Manila, P.I.
Boushey, Homer A., Jr.	Stanford Univ., Calif.
Brown, William Melville	Long Beach, Calif.
Cecil, Chester Witten, Jr.	Abilene, Texas
Clausen, Radcliffe C.	Los Angeles, Calif.
Coddington, Lawrence C.	Seattle, Wash.
Cook, Frank Richardson	Riverside, Calif.
Cornett, John Beaumont	Waco, Texas
Cunningham, Tom Jefferson	Hampton, Va.
Darrow, Don Orville	Hollywood, Calif.
DeMarco, James Arthur	Rockville Centre, N.Y.
Fisher, William Parker	Southern Pines, N.C.
Ford, Oliver Edwin, Jr.	Crockett, Texas
Gist, Wm. Henry, Jr.	Carlisle, S.C.
Greenback, Lawrence W.	Ashtabula, Ohio
Gunn, Harold Austin	Nunn, Colo.
Guthrie, James Oscar	Bismarck, N.D.
Hall, Robert Windeck	Washington, D.C.
Haugen, Victor Raymond	Olympia, Wash.
Hilger, John Allen	Houston, Texas
Hollstein, Chas. Phillip	Kunkle, Ohio
Holtoner, Joseph Stanley	New York, N.Y.
Hopwood, Floyd Pauahi	Honolulu, T.H.
Hubbard, Boyd, Jr.	Adair, Iowa
Hutchinson, Donald Robert	Cleveland, Ohio
Jeffus, John Hal	Plainview, Texas
Kellogg, Ralph McKenzie	Plattsburgh, N.Y.
Lee, Joseph Day, Jr.	Pleasantville, N.Y.
Miller, Frederic H., Jr.	Union City, Ind.
Mundell, Lewis Leo	Alameda, Calif.
Nelson, Hilmer Cannon	Burton, Wash.
Paige, Potter Brooks	Washington, D.C.
Peterson, Norman Lewis	San Antonio, Texas
Pierce, George Everill	Montague, Mass.
Proper, Louis William	Modesto, Calif.
Randolph, Jack Lindley	Porterville, Calif.
Raybold, Leslie	Pine Knot, Calif.
Reynolds, John Markward	Mobile, Ala.
Rivard, Francis Leslie	Detroit, Mich.
Robertson, Wm. Ross, Jr.	Charlotte, N.C.
Rockwood, Ralph Charles	Sapulpa, Okla.
Root, Berton	Madison, S.D.
Schmid, Herman Alfred	Pasadena, Calif.
Selser, James Clyde, Jr.	New Orleans, La.
Smith, Douglas Whitehill	Mill Valley, Calif.
Snyder, Graves Hubbard	Charleston, W. Va.
Todd, Paul Engberg	San Antonio, Texas
Williams, Douglas Ellsworth	Washington, D.C.

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STATION ASSIGNMENT OF NEWLY APPOINTED OFFICERS

Special Orders of the War Department, recently issued, announce the date of rank of the 50 newly appointed officers of the Air Corps, Regular Army, as October 1, 1936, and their assignment to Air Corps stations, as follows:

To Barksdale Field, La.:
Lieuts. Ford, Cecil, Hall and Kellogg.

To Brooks Field, Texas:
Lieuts. Haugen, Cornett, Peterson and Snyder.

To Hamilton Field, Calif.:
Lieuts. Mundell, Pierce, Coddington, Proper, Randolph and Reynolds.

To Hawaiian Department:
Lieuts. Rockwood, Paige and Hopwood.

To Langley Field, Va.:
Lieuts. Jeffus, Selser, Gist, Cunningham, Lee, Greenback, Williams, Robertson and Dane.

To Fort Lewis, Wash.:
Lieuts. Boushey and Gunn.

To March Field, Calif.:
Lieuts. Cook, Smith, Darrow, Hubbard, Hilger, Todd, Raybold.

To Maxwell Field, Ala.:
Lieuts. Aring, Root, Schmid.

To Mitchel Field, N.Y.:
Lieuts. Hollstein, Nelson, Fisher, Allen, Rivard, DeMarco and Black.

To Panama Canal Department:
Lieut. Hutchinson.

To Patterson Field, Fairfield, Ohio.
Lieut. Miller.

To Randolph Field, Texas:
Lieut. Brown.

To Selfridge Field, Mich.:
Lieuts. Holtoner and Guthrie.

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PERMANENT PROMOTIONS

The following-named Air Corps officers holding the temporary rank of Major were promoted permanently to that rank as of October 1, 1936:

Major Ray A. Dunn
Major Frederick F. Christine
Major Earl S. Schofield

The following-named Air Corps officers holding the temporary rank of Lieutenant Colonel received permanent promotion to that rank, as of October 1, 1936:

Lieut. Colonel Michael F. Davis
Lieut. Colonel Hubert R. Harmon

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Special Orders of the War Department, recently issued, direct that the following-named Air Corps officers, upon completion of their tour of duty in the Hawaiian Department, to proceed to the stations indicated for duty:

To March Field, Calif: Lieut. Colonel Asa N. Duncan.

To Mitchel Field, N.Y.: 1st Lieuts. Milton F. Summerfelt and William L. Travis.

To Randolph Field, Texas: 1st Lieuts. William G. Bowyer and Charles H. Pottenger.

To Chanute Field, Ill.: 1st Lieut. Franklin S. Henley.

FLYING CADETS ASSIGNED TO OCTOBER, 1936, CLASS
at Primary Flying School, Randolph Field, Texas

Candidates from Civil Life

Daniel, William Allen	Birmingham, Ala.
Tacon, Avelin Paul, Jr.	Mobile, Ala.
Peterson, Arman	Flagstaff, Ariz.
Leisenring, William Pearson	Tucson, Ariz.
Daly, John William, Jr.	Tucson, Ariz.
Tyler, Kermit A.	Berkeley, Calif.
Rawlins, Jack Leo	Chico, Calif.
Heflin, Clifford John	Fresno, Calif.
Bleasdale, Jack Walter	Palo Alto, Calif.
Randall, Clifford	Pasadena, Calif.
Fletcher, Gene B.	San Diego, Calif.
McGinn, Fred L., Jr.	Canon City, Colo.
Heintz, Adam J.	Greeley, Colo.
Mitchell, Marvin G.	Weldona, Colo.
Varsell, Earl	New Britain, Conn.
David, Jeffre Cleo	Orlando, Fla.
Field, Charles William	Rocky Face, Ga.
Callaway, Richard C.	Washington, Ga.
Palmer, Paul M.	Carlinville, Ill.
Ewing, Willard G.	Chicago, Ill.
Maloney, Robert G.	Chicago, Ill.
Rogers, Floyd William	Chicago, Ill.
Hatch, Edwin Harley	Lisle, Ill.
Miller, Warren M., Jr.	Rockford, Ill.
Taylor, J. Francis, Jr.	Columbus, Ind.
Connor, Albert	Winslow, Ind.
Grogan, Charles E.	Indianapolis, Ind.
Dianich, Ben	Cedar Falls, Iowa
Zwack, John A.	Dubuque, Iowa
Runchey, Lyle W.	Sioux City, Iowa
Tannahill, Floyd A.	Phillipsburg, Kans.
Younkin, William Lodge	Summerfield, Kans.
Seward, Donald Earl	Topeka, Kans.
Young, Charles H.	Wellington, Kans.
Elder, William Erwin	Wichita, Kans.
Williams, Edwin T.	North Quincy, Mass.
Bridgman, Harold V., Jr.	Winthrop, Mass.
Dach, Kenneth M.	Minneapolis, Minn.
Barrett, Everett R.	St. Cloud, Minn.
Cassell, Raymond W.	Wirth, Minn.
Lowery, Herman F.	Hattiesburg, Miss.
Truitt, Homer M.	Booneville, Mo.
Pusey, Ralph L.	Kansas City, Mo.
Hughes, Jack Wesley	St. Joseph, Mo.
Ragsdale, Gerald H.	Columbus, Mont.
Miller, Wilbur G.	Livingston, Mont.
Haight, Standley S.	DuBois, Neb.
Long, Charles Frank	North Platte, Neb.
Sarson, Ralph Douglas	Omaha, Neb.
Livingston, Joseph Alfred	Meredith, N.H.
Leary, Richard W.	Brooklyn, N.Y.
Erhardt, Alfred John	Dobbs Ferry, N.Y.
Crane, Preston Milton	Germantown, N.Y.
Alberi, Americo	Mt. Vernon, N.Y.
Wilhelm, Don Louis, Jr.	Dayton, Ohio
Mahon, Don Louis, Jr.	Chickasha, Okla.
Mills, Frederick Willson	Ponca City, Okla.
Hug, George Wallace	Salem, Ore.
Keys, Paul Eugene	Ligonier, Pa.
Dwyer, Thomas A.W., Jr.	Philadelphia, Pa.
Beacham, Frank Shirley	Honea Path, S.C.
Alexander, Clay D.	Seneca, S.C.
McNickle, Marvin Leonard	Vermillion, S.D.
Gross, Valie C., Jr.	Nashville, Tenn.
Torrey, Alfred James	Nashville, Tenn.
James, Clyde Wolfe	Amarillo, Texas
Dyess, Edwin	Albany, Texas
Caldwell, Howard D.	Austin, Texas
Strother, M.B., Jr.	Austin, Texas
Olmsted, Charles T.	Brownsville, Texas
Taylor, Ray D.	Brownwood, Texas
Agan, Arthur C., Jr.	Corpus Christi, Texas
Gallagher, Francis B.	El Paso, Texas
Dillard, W. Ward	Garner, Texas
Beal, Lester Lee	Houston, Texas
Harper, Carl	Lubbock, Texas
Atkinson, Gwen Grover	Lufkin, Texas
Korges, Woodrow	Kingsville, Texas
Mason, Robert Louis	Post, Texas
Reese, John T.	Quitman, Texas
Wurzbach, Clemens K.	San Antonio, Texas
Huber, Paul O.	Salt Lake City, Utah
Leavitt, Carl J.	Salt Lake City, Utah
Morgan, Dale O.	Salt Lake City, Utah
James, Herbert Walker	Harrisonburg, Va.
Williams, John Stuart	North Garden, Va.
Williams, Jerome	Spokane, Wash.
Keeffe, Harold Michael	Adams, Wis.
Caldwell, Robert Melville	Madison, Wis.
Schoephoester, Melvin W.	Madison, Wis.
Mattioli, Joseph E.	Milwaukee, Wis.
Prokopovitz, Julian K.	Pulaski, Wis.

Adams, Richard E.S.	Honolulu, T. H.
Gregg, Raymond L.	Bryan, Texas
Warren, Roy Edward	Washington, D.C.

Enlisted Men, Army Air Corps

Rindom, Frank O., Jr. (Private) Liberal, Kans.
Primary Flying School, Randolph Field, Tex.
Davey, Force (Private) Fryeburg, Me.
Air Corps Detachment, Boston Airport, Mass.
Stewart, Gordon Augustus (Private) Midland, Ohio
98th Service Squadron, Chanute Field, Ill.
Paul, Joseph H. (Private) Marriottsville, Pa.
14th Air Base Squadron, Bolling Field, D.C.

Enlisted Men, Other Branches of the Army

O'Neal, Wilton E. (Corporal) Hot Springs, Ark.
Finance Office, Army and Navy General Hospital, Hot Springs, Arkansas.
Morton, Robert James Berwyn, Ill.
Co. E, 20th Inf., Fort F.E. Warren, Wyo.
Kravetz, Jack Baltimore, Md.
51st Signal Battalion, Ft. Monmouth, N.J.
Koshko, John R. Bethlehem, Pa.
51st Coast Artillery (Headquarters Battery) Fort Monroe, Va.

KELLY FIELD GRADUATES MORE ARMY FLYERS

Thirty-four Regular Army officers, thirty-eight Flying Cadets, and one officer of the Philippine Constabulary comprised the class which graduated from the Advanced Flying School at Kelly Field, Texas, on October 7th.

Of the 34 officer graduates, four are members of the Army Air Corps, namely, Lieut. Colonel William O. Butler, Capts. Courtland Brown, James F. Powell and Robert R. Selway, Jr. These officers received the rating of "Airplane Pilot", making a total of four flying ratings which they now hold, the other three being "Airship Pilot," "Balloon Observer," and "Airplane Observer."

Col. Butler, Captains Brown and Powell specialized in Observation Aviation and Captain Selway in Bombardment Aviation.

Colonel Butler has received orders to report to the Commanding General, Presidio of San Francisco, Calif., for temporary duty awaiting sailing date to the Panama Canal Department, where he will be on duty with the Air Corps. Captain Brown has been assigned to duty at Brooks Field, Texas; Captain Powell to Wright Field, Dayton, Ohio, and Captain Selway to Pope Field, Fort Bragg, N.C.

Of the remaining thirty officer graduates of the Advanced Flying School, all of whom are West Pointers, 28 are members of the June, 1935, Class of the U.S. Military Academy. There were 47 members of this class who were assigned to the Air Corps for flying training. It will, therefore, be noted that 60% of the number who entered upon their flying training successfully completed the one-year course.

The October, 1935, Class at the Air Corps Primary Flying School originally numbered 146 students. The total number of graduates was 73. Thus, exactly 50% of the students who started the course came through with flying colors, received their "Wings" and the rating of "Airplane Pilot."

The thirty officer graduates who were originally commissioned in other branches of the service and who have been ordered transferred to the Air Corps are enumerated below, as follows:

MEMBERS OF THE 1935 WEST POINT CLASS

All Second Lieutenants

Berquist, Kenneth P., C.E.	Crookston, Minn.
Chapman, Willis F., Sig.Corps	Jackson, Miss.
Daly, Charles J., Inf.	Pacific Grove, Calif.
Davis, Leighton I., C.E.	Lyndhurst, N. J.
Ellsworth, Richard E., Cav.	Erie, Pa.
Fickel, Arthur A., F.A.	Fort Sam Houston, Texas
Freudenthal, Wilhelm C., Cav.	Worcester, Mass.
Gent, Thomas J., Jr., Inf.	Crestwood, N.Y.
Glassford,Pelham D.,Jr.,Cav.	Washington, D.C.
Ingram, Downs E., F.A.	McElhattan, Pa.
Knowles, Samuel B.,Jr.,Inf.	Beechhurst, N.J.
Mitchell, Samuel C., Inf.	Westerleigh, N.Y.
Musgrave, Thomas C., Jr.	Atlanta, Ga.
Presnell., David G., F.A.	Atlanta, Ga.
Roberts, Jack, Inf.	New York, N.Y.
Russell, Joseph G., Inf.	Fort Worth, Texas
Saxton, Lamont, Inf.	Lynchburg, Va.
Shower, Albert J., C.E.	Madison, Wis.
Simons, Maurice M., Inf.	Ft. Leavenworth,Kans.
Smith, George R., Jr., C.E.	Coronado Beach,Fla
Stillman, Robert M., F.A.	Pueblo, Colo.
Sumi, Raymond W., F.A.	Nashhwauk,Minn.
Thompson, Glenn C.,Inf.	Roanoke Rapids, N.C.
Totten, James W., C.A.	Fort Omaha, Neb.
Tyer,. Aaron W., Inf.	Natchez, Miss.
Walsh, James H., F.A.	Carbondale, Pa.
Wildes, Thomas, Cav.	Brooklyn, N.Y.
Wilson, James V., F.A.	Elwood City, Pa.

OTHER WEST POINT GRADUATES

Buestow, Paul E., C.E.*	Lynbrook, N.Y.
Thatcher, Herbert B., Inf.	East Orange,N.J.

*First Lieutenant

FOREIGN OFFICER

Francisco, Jose, 3rd Lieut.,Philippine Constabulary.

FLYING CADETS

Adkinson, Bourne	A	Compton, Calif.
Anderson, Arthur R.	O	Crafton, Pa.
Anderson, George R.	B	Worcester, Mass.
Anderson, James W., Jr.	B	Kansas City, Mo.
Averill, James C.	A	Brattleboro, Vt.
Barrett, Henry G.	O	Little Rock, Ark.
Boyd, Robert	B	Asheville, N.C.
Bradshaw, John O.	O	Highland, Ind.
Childre, Cecil H.	B	Westaco, Texas
Coffield, Michael J.	A	Los Angeles, Calif.
Couch, Alexander P.	B	El Centro, Calif.
Ferris, John M.	B	Detroit, Mich.
Funk, Ben I.	A	Denver, Colo.
Gardner, Raymond H., Jr.	P	Albian, Mich.
Gray, Howard W.	B	St. Paul, Minn.
Howe, Charles J.	O	Clairton, Pa.
Huish, Frederic G.	O	Portland, Ore.
Keith, Troy	P	Little Rock, Ark.
Kennedy, William J.	B	Oklahoma City, Okla.
Kent, Billy W.	B	Braddyville, Iowa
Kilgore, John R.	B	Nashville, Tenn.
Kunze, Royce G.	A	Detroit, Oregon
Learned, Park R., Jr.	P	St. Paul, Minn.
Leber, Harry P., Jr.	B	Philadelphia, Pa.
McIntyre, Patrick W.	B	Chicago, Ill.
Nelson, Charles K., Jr.	B	Hammonton, N.J.
Ogden, Alban B., Jr.	B	Des Moines,Iowa
Ohlke, Harold W.	A	Kansas City, Mo.
Orth, Robert C.	O	Los Angeles, Calif.
Pharr, Marion N.	A	Gainesville, Ga.
Ranney, George F.	B	Greenville, Mich.
Rohrbough, Leonard M.	P	Tacoma, Wash.
Schmitt, Arthur W., Jr.	B	Madison, N.J.
Scott, Churchill L.,Jr.	A	Brownsville, Texas
Stetson, Loring F., Jr.	P	Lilliwaup, Wash.
Thompson, Milton E.	O	Portland, Oregon
Todd, Jack F.	A	Visalia, Calif.
Wangeman, Herbert O.	A	Moorpark, Calif.

NOTE: A-Attack Aviation; B-Bombardment Aviation; O-Observation Aviation; P-Pursuit Aviation.

The officer graduates specialized in the various branches of combat aviation, as follows:

Attack: Lieuts. Berquist, Daly, Roberts, Shower, Sumi, Tyler.

Bombardment: Lieuts. Ruestow, Chapman, Fickel, Glassford, Ingram, Mitchell, Musgrave, Presnell, Simons, Stillman, Thompson, Walsh, Wildes.

Observation: Lieuts. Thatcher, Ellsworth, Smith, Totten.

Pursuit: Lieuts. Davis, Freudenthal, Gent, Knowles, Russell, Saxton, Wilson.

The above-named officers have been assigned to Air Corps stations, as follows:

To Hawaiian Department: Lieuts. Ruestow, Thatcher, Simons and Stillwell.

To March Field, Calif: Lieuts. Daly, Tyer, and Presnell.

To Brooks Field, Texas: Lieut. Smith.

To Langley Field, Va.: Lieuts. Berquist, Musgrave, Thompson and Totten.

To Barksdale Field, La.: Lieut. Saxton.

To Mitchel Field, N.Y.: Lieut. Ellsworth.

To Scott Field, Ill.: Lieut. Wilson.

To Panama Canal Department: Lieuts. Fickel, Freudenthal, Gent and Walsh.

To Hawaiian Department: Lieuts. Chapman, Davis, Glassford, Ingram, Knowles, Mitchell, Roberts, Russell, Shower, Sumi and Wildes.

With respect to the station assignments of the Flying Cadet graduates, the Attack Pilots are slated for Barksdale Field, La.; the Pursuit also for Barksdale Field; the Observation for Brooks Field, Texas; and of the 16 Bombardment pilots, five will go to Hamilton Field, Calif., and eleven to March Field, Calif. These pilots will be assigned to active duty with tactical organizations under their Cadet status for the period of one year.

Major General Herbert J. Brees, U.S. Army, who was recently assigned to the command of the 8th Corps Area, replacing Major General Frank Parker, retired, delivered the graduation address. Speaking in the Post Theatre before 800 persons, General Brees cautioned the graduates not to take unnecessary chances after they are assigned to tactical units. He pointed out that most of the casualties in the Air Corps resulted among the younger officers, recently graduated.

General Brees stressed the desirability of the Air Corps officers to coordinate with officers from other branches of the service and to learn more about the activities of the ground forces. He also reminded the Cadets that upon their showing of proficiency with tactical units depends their chances of winning regular commissions in the Air Corps.

Lieut. Jose Francisco, of the Philippine Islands, the only foreign officer of the class, was praised for his work. General Brees pointed out the future for the officer as a leader in air defense of the newly formed government in the Pacific.

In addition to the officers of Kelly Field there were many visitors from the other Air Corps fields near San Antonio. A total of 104 Cadets and 54 officers of the flying class of Randolph Field was present and made up part of the reviewers of the flights of the graduates which preceded the presentation of diplomas and the address by General Brees.

Lieut. Colonel Roy M. Jones, acting commander of Kelly Field in the absence of Colonel Arnold N. Krogstad, who was ill, was master of ceremonies.

Brigadier General James E. Chaney, Commandant of the Air Corps Training Center, Randolph Field, presented the principal speaker, General Brees. Chaplain George J. McMurry, of Randolph Field, gave the invocation and benediction.

Honored guests were Colonel Henry W. Harms, commander of Randolph Field; Colonel Arnold D. Tuttle, of the School of Aviation Medicine, Randolph Field; Lieut. Colonel E.B. Lyons, Director of Flying at Randolph Field; and Major R.D. Knapp, Director of Flying at Kelly Field.

An interesting incident in connection with the graduation exercises was the presentation of the "Wings" to Lieut. Arthur A. Fickel by his father, Colonel Jacob E. Fickel, Air Corps, Air Officer of the 9th Corps Area, San Francisco, Calif., who came to Kelly Field to see his son graduate.

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AERONAUTICAL EDUCATION IN ITALIAN SCHOOLS

An educational movement, along lines laid down by the Ministry of Aeronautics, is being carried on in Italian schools in cooperation with the Royal National Aeronautics Union. The purpose is to imbue and familiarize Italian youth with the elemental phases of aeronautics. The program provides that the first educational steps along these lines be sufficiently elemental that they may be grasped by very young children whose minds are still plastic. Simple cardboard models by the thousand, aerodynamically correct in all details, are distributed to schoolboys with the idea of arousing, from the outset, a spirit of competition. School teachers are instructed by the R.N.A.U., so that they may encourage the boys to build flying models and organize contests. When the primary interest has been aroused, the students receive more advanced instruction on different types of aircraft.

At the age of about 11 or 12 years, the second period of instruction begins. From the cutting out of models already designed, they are now taught some of the rudiments of aerodynamics. At this age the boy attends the school work-shop for aircraft modelling.

Schools of this kind, all of which are under the supervision of the R.N.A.U., have already been opened in 32 Italian cities. An experimental aircraft modelling center has been set up at R.N.A.U. headquarters for training school teachers.

Each year model aircraft competitions are held in the larger towns, and the winners are sent to Rome to take part in the annual contest held at Littorio Airport. Last year a race was held at Trieste exclusively for seaplane models.

When a boy completes the full aircraft modelling course he receives a certificate which is recognized if he decides to go in for more advanced aeronautical work.

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The Editor of the News Letter would appreciate contribution of material from Randolph, Chanute and Mitchel Fields.

21ST AIRSHIP GROUP MANEUVERS
By the Scott Field Correspondent

THE 21st Airship Group (less the 19th Airship Squadron and the 21st Airship Group Headquarters) conducted its annual maneuvers during the period September 15th to 29th at Lake Springfield, six miles from Springfield, Ill. Major Neal Creighton, Commander of the 9th Airship Squadron, was in command of the camp.

At 4:00 a.m. September 15th, 100 men and 5 officers departed from Scott Field, Belleville, Ill., in a 24-truck convoy. They arrived at the camp site, 90 miles away, at 7:00 a.m. Four hours later the 32 tents that formed the encampment were erected and ready for service.

The maneuvers of an Airship Group naturally do not consist of mimic warfare. Instead, the maneuvers are confined to living in the field and carrying out airship operations without the usual airdrome facilities. During the fifteen days an airship flew to and landed at the make-shift landing field on six different days. The airships were sheltered in the airship hangar at Scott Field at night and on non-flying days. On each flight the airship, whichever one landed, was moored for a period varying from 15 minutes to four hours. This mooring experience is valuable both for the pilots and for the maneuvering party, because the changing directions and velocities of the wind and the variations in temperature keep everyone alert.

On the mornings when airship operations were not scheduled, military and technical lectures were given to the men. All afternoons, except Sundays, were devoted to lectures and supervised athletics.

The camp was located in a wonderful spot at the edge of an artificial lake on park property owned by the City of Springfield. The tents were shaded from the sun by tall, shady oak and walnut trees. There was a water pipe line handy which supplied water for drinking and cooking purposes and for shower baths. Swimming, boating and fishing were excellent in the clear, deep lake.

First Lieut. James C. Bean, Chaplain, arranged various kinds of entertainment.

Other officers participating in the maneuvers were: Captain John A. Tarro, Air Corps, Communications and Transportation Officer; Captain Gerald G. Johnston, Air Corps, Adjutant and Publicity Officer, and Captain John B. Herman, Medical Corps, Medical Officer.

Colonel Frank M. Kennedy, Commanding Officer of Scott Field, made numerous visits to the encampment by airplane and airship.

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First Lieut. Ralph O. Brownfield, Air Corps, Adjutant of Scott Field, Ill., was scheduled to depart from that field on October 6th on a 4,800-mile training flight in a new Douglas O-46A airplane. The flight was to include fourteen stops, the route being through the following places: Fort Riley, Kansas; Denver, Colo.; Salt Lake City, Utah; Elko, Nevada; San Francisco, Calif.; Medford and Portland, Oregon; Seattle and Spokane, Wash.; Billings, Montana; Belle Fourche and Rapid City, South Dakota; North Platte, Nebraska, and Kansas City, Missouri.

Lieut. Brownfield estimated that the flight would require 28 hours' flying time stretched over a period of five days.

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AIR CORPS SUMMER TRAINING CAMPS
Seventh Corps Area

The Air Corps Reserve of the 7th Corps Area, under the command of Captain Harry C. Wisehart, Air Corps, Richards Field, Kansas City, Mo., just completed two excellent summer training camps.

Both active duty camps were held at Camp Ripley, Minn. The first, from Aug. 23rd to September 5th, and the second from September 6th to September 19th. Camp Ripley proved an ideal reservation for summer training camps.

The equipment made available for training consisted of two O1-G's, one O1-E, one O-25A and four PT-3A's. The O-25A was not received until after the first camp was almost over. However, with only those few airplanes, over 751 hours were flown during the two training camps.

For training, each Reserve Pilot received the following program of instruction:

1. Fired 75 rounds on sleeve target towed by O-25.
2. Fired 75 rounds on ground target.
3. Flew tow target airplane.
4. Dropped average of sixteen 17-pound dummy bombs at 100-ft. circle as a target.
5. Received three artillery adjustments using the Bishop trainer.
6. Observed at least one actual artillery mission using 75 mm guns.
7. Infantry contact missions.
8. Two-way radio problems with both Artillery and Infantry problems.
9. Used drop message and pick up messages with Infantry problems.
10. Panel work both training and with Infantry units in operation.
11. Mosaic photography.
12. Oblique photography.
13. Formation.
14. 90 deg., 180 deg. and 360 deg. approaches to spot landings.
15. Approximately average of 50 minutes night flying.

(Continued on page 12)

BIOGRAPHIES

LIEUT. COLONEL HOWARD C. DAVIDSON

Lieut. Colonel Howard C. Davidson, now on duty as Executive in the Office of the Chief of the Air Corps, Washington, D.C., was born at Wharton, Texas, September 15, 1890.

Graduating from the United States Military Academy June 12, 1913, he was commissioned a second lieutenant and assigned to the 22nd Infantry. He served with this regiment at Texas City, Texas, from September, 1913, to November, 1914; at Naco, Arizona, to February, 1915, and at Douglas, Arizona, to July, 1915. On July 1, 1915, he was transferred to the 24th Infantry, and he served with this regiment in the Philippines until September, 1915, when he was transferred to the 27th Infantry.

Detailed to the Aviation Section, Signal Corps, he attended the Aviation School at San Diego, Calif., and upon the completion of the course of flying training received the rating of Junior Military Aviator.

Colonel Davidson joined the 1st Aero Squadron at Columbus, New Mexico, in September, 1916, and served on border patrol and also with the Punitive Expedition at El Valle, Mexico. In February, 1917, he joined the 3rd Aero Squadron, and served with this organization until May, 1917, when he was assigned as Commandant of the School of Military Aeronautics, Cornell University, Ithaca, N.Y.

In October, 1917, he sailed for duty overseas, and was stationed at Paris and later at Tours as Personnel Officer at Air Service Headquarters to February, 1918. He was Officer in Charge of Flying at the 2nd Aviation Instruction Center at Tours, France, to August, 1918; Corps Air Service Commander, 7th Army Corps, September, 1918, to April, 1919; at Paris as student at Sorbonne University, April to July, 1919.

Upon his return to the United States in August, 1919, Col. Davidson was assigned to McCook Field, Dayton, Ohio, for duty in the Power Plant Section. He assumed the duty of Supply Officer on November 1, 1919; Quartermaster from August to October, 1920, in addition to his other duties, and upon his being relieved from this position in September, 1921, he was assigned as student at the Air Service Engineering School, McCook Field. Upon his graduation from this School in July, 1922, he was assigned to duty as Assistant Military Attache at the American Embassy, London, England.

At the end of his four-year tour of duty in London, Colonel Davidson, in September, 1926, was assigned to duty at Mitchel Field, N.Y., where he served as Operations Officer and performed various other duties, until December 16, 1927. After several weeks of duty as commanding officer of Mitchel Field, he was, on January 4, 1928, assigned to the command of Bolling Field, D.C. Relieved of the command of Bolling Field August 24, 1932, in order to attend the Air Corps Tactical School, Maxwell Field, Ala., Col. Davidson upon his graduation pursued the course of instruction at the Command and General Staff School, Fort Leavenworth, Kansas. His next assignment was with the 19th Bombardment Group at Rockwell Field, Coronado, Calif. He commanded this organization both at Rockwell Field and at March Field, Calif., to which station the 19th was transferred following the abandonment of Rockwell Field as a station for Air Corps troops.

Colonel Davidson was transferred to the Office of the Chief of the Air Corps and assigned as Executive Officer on September 9, 1936.

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LIEUT. COLONEL ASA NORTH DUNCAN

Lieut. Colonel Asa N. Duncan, Air Corps, who is being relieved at this writing as Commanding Officer of the 5th Composite Group, Luke Field, T.H., by reason of the expiration of his tour of foreign service, was born at Leighton, Alabama, March 30, 1892. He attended Sheffield, Ala., High School from 1906 to 1909; State Normal College, Florence, Ala., from 1909 to 1911; and Alabama Polytechnic Institute from 1911 to 1913.

Enlisting in Company K, 2nd Infantry, Alabama National Guard, September 14, 1914, he served therewith until September 26, 1916, when he was commissioned a first lieutenant, 1st Alabama Cavalry. He was on duty with this organization in Federal Service, with station at San Antonio, Texas, from December 9, 1916, to May 1, 1917.

On January 9, 1918, Col. Duncan was detailed to the Air Service School for Aerial Observers at Fort Sill, Okla., and upon his graduation therefrom, April 27, 1918, he was stationed at the Aviation Concentration Camp at Camp Dick, Dallas, Texas, May 1 to June 1, 1918, and at Taliaferro Field, Hicks, Texas, where he took the aerial gunnery course, June 1 to June 22, 1918. On the latter date he was rated as Aerial Observer.

Ordered to duty overseas, he was stationed at the 2nd Aviation Instruction Center at Tours, France, August 14, 1918, to September 20, 1918. On September 23rd he was assigned to the 91st Aero Squadron, 1st Army, at Vavincourt, France, being on duty as Observer and Operations Officer. He served with the 91st Squadron, when attached to the Third Army, from November 18, 1918, to April 9, 1919.

Colonel Duncan was cited in orders by the Air Service Commander, First Army, for having set an excellent example to the officers and enlisted men of his organization by his remarkable exhibition of coolness and bravery in combat and his exceptional devotion to duty under all circumstances.

On October 9, 1918, while taking photographs from the leading airplane of a formation of three from Damvillers to Jametz, over the latter town fourteen enemy pursuit airplanes were encountered and a running fight ensued all the way back to Brieulles-Sur-Meuse. Colonel Duncan, then a Captain, who was observer in an airplane piloted by Lieut. George C. Kenney (now Major, Air Corps) finished taking his photographs during the attack, shooting down one hostile aircraft for which he received official confirmation, and taking part in the remainder of the fight during which two other enemy aircraft were destroyed.

On October 10, 1918, while acting as observer in an airplane protecting a photographic mission between Dun and Stenay, Colonel Duncan's effective fire kept off an attack by six hostile aircraft and enabled the photographic plane to finish its mission and return safely home.

On October 23, 1918, while protecting another photographic mission from Dun to Stenay, a patrol of approximately fifty hostile aircraft was encountered over Sassy-Sur-Meuse. Colonel Duncan fought until both his guns were hopelessly jammed by shots which pierced both his magazine drums. During the combat he was twice knocked down by the impact of shots against his gun mount, but with his cockpit and flying clothes riddled with bullets he got up and continued to operate his guns as long as they functioned. The photographic plane was thus enabled to escape with photographs which were of considerable military value.

On October 31, 1918, after being driven from the course twice by hostile pursuit in superior numbers, Colonel Duncan succeeded in getting the photographs between Stenay and Montmedy that he had been assigned to take. Although his ammunition was partly used up during the first and second combats, he succeeded in holding off a third attack of nine enemy aircraft in a running fight which lasted all the way from Stenay to Verdun.

On November 3, 1918, Colonel Duncan completed an exceptionally successful reconnaissance mission from Jametz to Montmedy, and to the east of that line to which special attention was called in the Air Service operations report of that day. On account of adverse weather conditions, the mission was flown for the most part at low altitudes, and the airplane was continuously subjected to heavy anti-aircraft fire. Twice hostile pursuit endeavored to drive the airplane off, but each time by temporarily taking advantage of concealment in clouds the mission was continued.

Colonel Duncan returned to the United States with the 91st Aero Squadron, and he was stationed at Park Field, Millington, Tenn., until March 24, 1921, when he was assigned to duty as student at the Air Service Primary Flying School at Carlstrom Field, Arcadia, Fla. Completing his primary flying training, he proceeded to the Advanced Flying School at Kelly Field, Texas, for advanced training as a Bombardment pilot. He graduated in January, 1922, and was rated "Airplane Pilot."

For four years thereafter, Colonel Duncan was stationed at Birmingham, Ala., as Instructor of the National Guard Air Service, State of Alabama. He was then transferred, in August, 1927, to Langley Field, Va., where he was a student at and graduated from the Air Corps Tactical School, June, 1929. He remained at Langley Field and commanded the 20th Bombardment Squadron, and at various periods temporarily commanded the Second Bombardment Group.

After completing a two-year course at the Command and General Staff School at Fort Leavenworth, Kansas, Colonel Duncan, in July, 1931, was assigned to duty in the Schools Section, Training and Operations Division, Office of the Chief of the Air Corps, Washington, D.C.

During the operation of the Air Mail by the Army Air Corps, he was assigned as Chief of the Intelligence and Press Relations Section, G-2, Office of the Chief of the Air Corps.

Following a brief period of service as Assistant Executive, Office of the Chief of the Air Corps, Colonel Duncan was transferred to the Hawaiian Department, where he was placed in command of the 5th Composite Group and of Luke Field. He is now under orders to proceed to March Field, Riverside, Calif., for duty.

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NEW ALTITUDE RECORD BY BRITISH PILOT

Subject to official homologation by the Federation Aeronautique Internationale, the world's altitude record stands at present to the credit of Great Britain. Squadron Leader F.R.D. Swain, of the Royal Air Force, piloting a Bristol monoplane powered with a Bristol Pegasus engine of a special type, recently reached an altitude of 15,230 meters (49,967 feet), thus eclipsing the record of 48,674 feet made by the French pilot, Detre, who flew a Potez airplane.

Squadron Leader Swain took off on this altitude flight at 7:30 a.m. and landed at 10:50 a.m.

Known as the Bristol 138, the monoplane used on this record-breaking altitude flight is a low-wing type, constructed mainly of wood, except the engine mounting and cowling. Loaded for the flight, the plane weighed 5,310 pounds.

Air Corps Summer Training Camps

(Continued from Page 9)

16. Cross-country flight overnight.

The scores on aerial machine gunnery and bombing were very satisfactory, some scores being exceptionally high.

Night observation missions were made on Artillery in camouflaged positions. These positions were again observed with dawn patrol with excellent results from the pilots and observers. Battery F, 14th Field Artillery, was the only unit not found of the four units in position.

Night flying was accomplished by the use of several automobile headlights to light the landing area and colored flash lights for running lights.

Artillery adjustment missions were completed with an average of less than ten minutes from target designation to the end of the problem.

Motor transportation and supplies were moved from Kansas City, Mo., to Camp Ripley, a distance of 610 miles; camp set up; airplanes maintained; and supply, photographic gunnery, bombing, radio, guard, camp police and other departments were operated with a total of 14 men.

The entire operation of all flying and training of Reserve officers was accomplished without a single airplane being damaged or even scratched.

In view of the fact that very few Reserve pilots had ever received some of this training in previous years, the results achieved were most gratifying. All reservists worked hard and tried their utmost to perform each mission in an excellent manner, with the result that a letter of commendation was received from Colonel J.H. Wallace, commanding the Field Artillery Brigade.

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BRITISH DEVELOP "H" TYPE AVIATION ENGINE

The unorthodox "H" shaped engine, Rapier Series V, has received a certificate of type approval from the British Air Ministry following the completion of official test runs. This engine, rated to deliver 315 h.p. at 10,000 feet with a maximum power output of 340 h.p. at 13,000 feet, has been designed to reduce head resistance normally encountered by air-cooled engines. The net dry weight of this 16-cylinder, air-cooled engine is 720 pounds; fuel and oil consumption are claimed to be low. This engine has been selected to power the upper component of the Mayo composite aircraft, which component is launched in mid-air from a large flying boat.

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On the cover page of this issue of the News Letter is a photograph of the first Army airplane, which was accepted by the U.S. Government following a successful demonstration by Mr. Orville Wright at Fort Myer, Va., in 1909.

THE ENGLAND-JOHANNESBURG AIR RACE

Fifty-two hours and 57 minutes following the start of the air race from Portsmouth, England, to Johannesburg, South Africa, the winning plane, a Percival Vega Gull monoplane, powered with a Gipsy VI (Series II), 200 h.p. engine, landed at destination, covering the distance of 6,150 miles at an average speed of 116 miles per hour, elapsed time, and 156.3 miles per hour actual flying time.

The winning team, Messrs. C.W.A. Scott and Giles Guthrie, competed with eight other contestants for £10,000 prize money, the donor being Mr. I.W. Schlesinger, a prominent aviation enthusiast.

Originally there were 13 entries for this gruelling test of present-day aircraft of British manufacture, but at the starting time in the semi-darkness of the morning of September 29th, four airplanes failed to appear on the line.

The contestants, aside from the winning team, were -

C.M. Alington, Lieut. Booth and H.V. Alington in a B.A. Eagle, powered by a Gypsy Major engine.

Major A.M. Miller in a Vega Gull.

Flight Lieut. Tommy Rose and Jack Bagshaw in a Double Eagle plane, powered with two Gipsy Six engines.

Victor Smith in a Miles Sparrowhawk plane, powered with a Gipsy Major engine.

D. Llewellyn and C.L. Hughesdon in a Vega Gull plane.

Waller, Findlay, Peachey and Morgan in an Envoy plane, powered with two Cheetah IX engines.

Captain S.S. Halse in a Mew Gull plane, powered with a Gypsy Six engine.

A.L. Clouston in a Hawk Six plane, powered with a Gipsy Six engine.

All the Vegal Gull planes flown in this race were powered with the Gypsy Six engine.

The route of the contestants took them through France, Germany, Austria, Yugo-Slavia, Greece, across the Mediterranean Sea, and from Cairo, Egypt, almost in a straight line down Africa to Johannesburg.

Two of the contestants - Alington and Booth and Major Miller failed to clear Europe, the first-named team, while refueling their plane at Nurnburg, experiencing the misfortune of striking a bad bump while taking off, causing the undercarriage of their plane to fold up.

Major Miller was out of the race when he had fuel feed trouble at Belgrade, Yugo-Slavia.

Rose and Bagshaw, who were forced down at Linz, Austria, by an air lock but who continued on and lost several valuable hours at Athens trying to remove the trouble, were forced to give up at Cairo, Egypt, where in landing one leg of the retractable landing gear gave way and one propeller was broken.

Victor Smith dropped out of the race at Cairo. He was forced down several times due to oil trouble and delayed to such an extent that he found it useless to continue in the race.

Llewellyn and Hughesdon, who had been running a neck and neck race with Scott and Guthrie, were forced to land, due to fuel exhaustion caused by a leak in one tank, on the shores of

(Continued on page 19)

OBITUARIES

An airplane accident on the afternoon of September 15th, near East Schertz, Texas, cost the lives of the pilot, 1st Lieut. Andrew F. Solter, Air Corps, and his passenger, Flying Cadet Carl L. Smalley.

Lieut. Solter, who was on duty as flying instructor at the Air Corps Primary Flying School at Randolph Field, Texas, was at the time of the accident giving flying instruction to Cadet Smalley. Due to causes unknown, the plane went into a spin from a comparatively low altitude. Observers of the accident noted that the airplane appeared about to come out of the spin just as the crash occurred. An investigation disclosed no structural defects in the airplane.

Lieut. Solter was born at El Paso, Texas, March 4, 1904. After passing through the grammar schools and graduating from the Hollywood, Calif., High School, he attended the University of Southern California for four years, specializing in law. Prior to his appointment as a Flying Cadet in the Air Corps, he was a member of the 115th Observation Squadron, California National Guard Air Service.

Lieut. Solter reported at the Primary Flying School at March Field, Riverside, Calif., for flying training, on November 1, 1927. He completed the eight months' course at this school on June 28, 1928, and was thereupon transferred to Kelly Field, Texas, to complete the four months' advanced work at the Advanced Flying School. Specializing in Pursuit Aviation, he graduated on October 20, 1928, on which date he was appointed a second lieutenant in the Air Reserve. His rating as an "Airplane Pilot" dates from October 30, 1928.

Assigned to active duty at Rockwell Field, Coronado, Calif., Lieut. Solter joined the 95th Pursuit Squadron and performed the duties of Squadron Athletic Officer. He was greatly interested in athletics and coached and played with the March Field basketball team.

Passing the examination for a permanent commission in the Regular Army, Lieut. Solter was commissioned a Second Lieutenant in the Air Corps February 25, 1929, and retained his affiliation with the 95th Pursuit Squadron.

During the Air Corps Maneuvers in Ohio in the Spring of 1929, Lieut. Solter joined the ranks of the mythical Caterpillar Club. The accident which necessitated his emergency parachute jump was caused by a collision of two planes of the 95th Pursuit Squadron at 13,000 feet altitude over the northern section of Columbus, Ohio. He jumped after leaking gas from the tank ignited, but not before he received burns on portions of his face not covered by his flying helmet.

On September 3, 1929, Lieut. Solter reported for duty as student at the Air Corps Technical School, Chanute Field, Rantoul, Ill., to pursue a course of instruction in aircraft armament. Following the successful completion of this course and his graduation on March 14, 1930, he returned to Rockwell Field, rejoined the 95th Squadron, and was assigned to duty as Squadron Armament Officer. He was transferred with his Squadron to March Field, Riverside, Calif., in October, 1931.

Lieut. Solter at different times performed various other duties as a member of the 95th, such as commander of "A" Flight, Squadron Engineering Officer, and Squadron Supply Officer. In May, 1934, he was transferred to the Air Corps Primary Flying School at Randolph Field, Texas, for duty as Flying Instructor.

During the nine years he was with the Air Corps, Lieut. Solter accumulated over 2500 hours' flying time. He held a Department of Commerce license as Transport Pilot.

An able and efficient young officer, he was always cheerful, alert and cooperative. Modest and unassuming, he was well liked by all with whom he came in contact, and those who knew him keenly regret his untimely death.

Flying Cadet Carl Lothrop Smalley was born at Somerville, Mass., August 28, 1913. He graduated from Somerville High School in June, 1931, and from Boston University College of Business Administration, in June, 1936.

In his application for a Flying Cadet appointment, Cadet Smalley stated that he had been interested in aviation since the age of ten; that in 1931 he took his first dual instruction at East Boston Airport; that he soloed in four hours, held a Private License with a total of 85 hours. He further stated that his flying experience had been varied, including cross-country flights, forced landings, etc., in about 25 different ships; that he had about 100 hours as passenger, and worked at an airport for two summers during college as mechanic, pilot, etc.

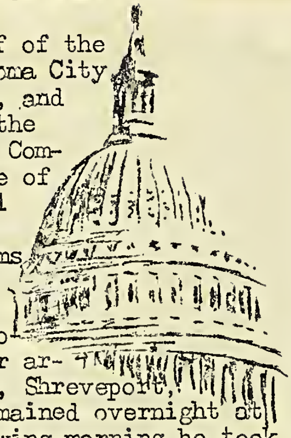
Following his appointment as a Flying Cadet, in June, 1936, Cadet Smalley reported for flying training at Randolph Field on the 29th of that month.

Cadet Smalley is survived by his mother, Mrs. Helen Smalley, Sommerville, Mass.

Lieut. Solter is survived by his widow and three children - the oldest, five years of age. His father, Mr. Edwin M. Solter, resides in Los Angeles.

The heartfelt sympathy of the Air Corps is extended to the bereaved families of these men who died in the service of their country.

WASHINGTON OFFICE NOTES



General Westover, Chief of the Air Corps, visited Oklahoma City, Oklahoma, on October 9th, and was a luncheon guest of the Oklahoma City Chamber of Commerce. During the course of the luncheon, the General delivered an address on military aviation problems of today.

Leaving Washington at 9:45 a.m., Thursday, October 8th, General Westover arrived at Barksdale Field, Shreveport, La., before dark, and remained overnight at that post. On the following morning he took off for Oklahoma City and arrived there at 10:50 o'clock.

During the afternoon of October 9th, General Westover held conferences at Oklahoma City with Unit Instructors of the Air Reserve, and delivered an address in the evening at a banquet of the Air Reserve Association at the Hotel Biltmore.

On the morning of October 10th, the General gave a radio broadcast at 9:30 o'clock, and an hour later he spoke at a joint meeting of the Unit Instructors of the Air Reserve, following which he departed for Wichita, Kansas, where he arrived at 11:45 o'clock. He visited and familiarized himself in turn with the factories of the Stearman Aircraft Company, the Cessna Aircraft Company and the Beech Aircraft Company. At 6:30 p.m., he attended a banquet under the auspices of the Wichita Chamber of Commerce, held in commemoration of the Diamond Jubilee of Kansas and dedicated particularly to the progress of aviation. He also delivered an address on that occasion.

Leaving Wichita at 7:00 a.m., CTS, Sunday morning, October 11th, he made the distance to Washington in slightly more than sevenhours, arriving at Bolling Field at 3:10 p.m. EST.

Lieut. Colonel Robert L. Walsh, Chief of the Reserve Division, and Major Rowland C.W. Blessley, of that Division, also attended the Reserve Officers' Convention at Oklahoma City. Before returning to his duties in the Chief's Office, Colonel Walsh will make an inspection trip to various Air Corps activities relative to Reserve matters. Major Blessley returned to Washington on October 12th.

Majors Lowell H. Smith and Edward V.Harbeck, Jr., returned October 12th to their duties in the Inspection Division from detached service at Wright Field, Dayton, Ohio.

On October 13th, the Chief's office had a rather unusual visitor in the person of Major Arthur I. Ennis, who is on duty at St. Paul, Minn., as Instructor of the National Guard Air Service of the State of Minnesota. Major Ennis, who was accompanied on his extended navigation flight to the east by Captain John W. Williams, Flight Surgeon, was formerly on duty in the Information Division, and the personnel of that Division extended him the glad hand. The climate up north appears to agree with "Art," as we were wont to call him.

Colonel Chalmers G. Hall and Captain James C. Cluck, of the Supply Division, returned on October 13th from the Engineering-Supply Conference held at Wright Field, Ohio.

Major Alfred W. Marriner returned October 8th from temporary duty at Chanute and Wright Fields. Captain Mervin E. Gross also returned the same day from a conference at Wright Field.

Major Arthur E. Easterbrook, who was the senior Air Corps officer at the 3rd Army Maneuvers, returned to his office on October 2nd.

Lieut. Colonel William E. Lynd returned on October 2nd from a ferrying mission to the West Coast.

Major Karl S. Axtater, of the Supply Division, returned October 7th following a navigation flight, in the course of which he stopped at Pittsburgh, Pa.; Wright Field, Ohio, and Indianapolis, Ind.

Colonel William C. McChord, Chief of the War Plans and Training Division, recently visited Patterson, Chanute and Selfridge Fields in connection with training matters.

Colonel Rush B. Lincoln returned on October 10th from leave of absence.

Recent visitors to the Chief's Office were Major Auby C. Strickland, of Randolph Field, who came for a conference, and 2nd Lieut. Edward S. Allee during the course of a navigation flight from Chanute Field, Ill.

Major William B. Souza, of the War Plans and Training Division, departed October 11th for temporary duty at Wright Field.

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AIR TRAVEL ACROSS THE PACIFIC

It appears that a definite date has now been set for the beginning of a passenger service on Pan American Airways line to Manila. It is reported that a weekly service will start on October 21st from San Francisco and that an eastbound service will start from Manila on October 29th. When the mail contract was given to Pan American Airways last year, it was understood a passenger service would start within one year. The opening of the service took place on November 22, 1935.

Loads thus far carried during mail service on the line have averaged about two tons payload between California and Hawaii, and as much as five tons on the shorter inter-island legs. The number of passengers to be carried in future, in addition to cargo, and the rates of fare are yet to be announced. It is understood the Traffic Department of the line has on file 1100 applications for tickets.

CADETS TO BE COMMISSIONED IN AIR RESERVE

The Chief of the Air Corps has recommended to the War Department that 31 Flying Cadets, who graduated from the Air Corps Advanced Flying School, Kelly Field, Texas, October 12, 1935, and who will complete their year of active duty under their cadet status with Air Corps tactical units on October 14, 1936, be commissioned second lieutenants in the Air Reserve, and that they be placed on extended active duty as Air Reserve units. Since three of these Flying Cadets recently passed the examination for appointment as second lieutenants in the Air Corps, Regular Army, 28 of these Cadets will be actually commissioned in the Air Reserve. The three newly appointed Regular officers are:

Graves Hubbard Snyder, of Lewisburg, W. Va., stationed at Brooks Field, Texas.

Robert Windeck Hall, of Washington, D.C., stationed at Barksdale Field, Shreveport, La.

John Markward Reynolds, of Mobile, Ala., stationed at Hamilton Field, San Rafael, Calif.

The Flying Cadets recommended for Reserve commissions are at present on duty at the Air Corps stations indicated below, viz:

Barksdale Field, Shreveport, La.

Shepard, Horace Armor *	Mobile, Ala.
Coulter, Theron	Eufaula, Ala.
McKissack, Thomas LeRoy	Englewood, Colo.
Paul, Robert Copeland	Watertown, Fla.
Macklin, Raleigh Hunter *	Ottawa, Kans.
Wilson, Cy *	Longview, Texas
Kleine, Bingham Trigg*	San Antonio, Texas
West, Herbert Madison, Jr.	San Antonio, Texas

Hamilton Field, San Rafael, Calif.

Reid, Edward Lewis	Little Rock, Ark.
Kight, Richard Thomas	Claude, Tex.

Langley Field, Hampton, Va.

Allen, James William *	Ithaca, N.Y.
Bockman, Charles Eugene, Jr. *	Portland, Ore.
Thayer, Merrill Elmer	Brattleboro, Vt.
LePenske, Edward August	Tacoma, Wash.

Mitchel Field, L.I., N.Y.

Randall, John Laverne *	Moscow, Idaho
Remington, Peter Havens *	Watertown, N.Y.

Brooks Field, San Antonio, Texas

Ellis, James Oldham	Greeley, Colo.
Zidiales, Stanley Anthony *	Middleboro, Mass.
Crank, Howell G.	Tulsa, Okla.
Lazarus, Willard Wright *	Corvallis, Ore.
Chapman, James W.	Austin, Texas

March Field, Riverside, Calif.

Herlick, Conrad Joe	Helendale, Calif.
Love, Robert Carter	Los Angeles, Calif.

Selfridge Field, Mt. Clemens, Mich.

Malcolm, Marion *	Iowa City, Iowa
Cochran, Franklin Miller, Jr.*	Davidson, N.C.
Nichols, Howard Fish	Marion, Ohio
Hedlund, Evart Wilbur *	Beresford, S.D.
Quick, Quentin Timson	Bellingham, Wash.

*These Flying Cadets already hold commissions in the Reserve Corps of other branches of the Service, and they are being recommended for transfer to the Air Reserve.

WAR DEPT. ORDERS AFFECTING AIR CORPS OFFICERS

Changes of Station: To Bolling Field, D.C.: Major Benjamin F. Griffin (Captain) from Brooks Field, Texas. - 1st Lieut. Ralph C. Rhudy from Kelly Field, Texas.

To Barksdale Field, La.: 1st Lieut. George W. Mundy from the Philippines. - 1st Lieuts. Frank A. Armstrong, Jr., Otto C. George and Thayer S. Olds from Panama Canal Department.

To Rockwell Air Depot, Calif.: Major Lionel H. Dunlap from the Philippines.

To March Field, Calif.: Major Harold A. McGinnis (Captain) from Hamilton Field, Calif.

To Langley Field, Va.: 1st Lieut. John S. Mills from the Philippines.- 1st Lieut. George H. Macnair from Panama Canal Department.

To Boston Airport, Boston, Mass.: 1st Lieut. Richard E. Cobb from duty with the 94th Division, Boston, Mass., and from further detail with Organized Reserves, First Corps Area.

To Selfridge Field, Mich.: 1st Lieut. John K. Gerhart from Hawaiian Department.

To Pope Field, Fort Bragg, N.C.: 1st Lieut. Richard J. Meyer, from Hawaiian Department.

To Air Corps Training Center, Randolph Field: 1st Lieut. Robin B. Epler, from Panama.

To Hamilton Field, Calif.: 1st Lieut. James D. Underhill from Panama Canal Department.

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THIRD ATTACK GROUP TO RECEIVE COLOMBIAN TROPHY

In a recent communication from the Headquarters of the GHQ Air Force, Langley Field, Va., to the Commanding General of the Third Wing, GHQ Air Force, Barksdale Field, Shreveport, La., it is stated that the Third Attack Group at that station, credited with having the lowest accident rate per 1,000 flying hours in the training year 1935-1936, will be presented the Colombian Trophy by the Commanding General of the GHQ Air Force in November, 1936, the exact date to be announced later.

The Trophy above mentioned was presented to the GHQ Air Force, in the name of the Republic of Colombia, by Major Benjamin Mendez, one of the foremost flyers in the Colombian Army, during the GHQ Air Force Maneuvers in the vicinity of Miami, Fla., in December, 1935. It is proposed to award this Trophy annually to that Group in the GHQ Air Force having the lowest accident rate per 1,000 flying hours each training year, as determined by the Inspection Division, Office of the Chief of the Air Corps.

A photographic reproduction of the Colombian Trophy appeared in the issue of the Air Corps News Letter of September 1, 1936.

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In the record-breaking altitude flight of the British pilot, Squadron Leader Swain, referred to on page 11 of this issue, it is reported that he wore an air-tight, electrically heated suit which later on almost spelled disaster. The transparent panel in the helmet became covered with ice and Swain had to cut the panel with a knife, which he could only do at a lower height to prevent the sudden difference in pressure becoming too high.

No attempt is being made here to publish a complete history of the early days of U.S. Army Aviation. Perhaps it may be possible to do this at some future time when the necessary material shall have been collected to furnish the basis for a full story of the pioneering days of a combat branch of the Army, the importance of which is assuming greater prominence with each passing day.

For the present, what is presented here is copied from a collection of disjointed items touching on various events which have transpired between twenty and twenty-five years ago, when military aviation in the U.S. Army was under the supervision of the Signal Corps. Some of these items may prove of interest in affording a comparison between conditions today and those which prevailed in the days of the pioneer military aviators.

It was not until June 30, 1909, that the first military plane was delivered to the Army. Proposals for this plane were opened by the Signal Corps, U.S. Army, on February 1, 1908.

The specifications for this first airplane appear elsewhere in this issue of the News Letter.

There were 22 bidders, and the bids ranged from $500 to $10,000. The bid of the Wright Brothers was $25,000, and the War Department, evidently convinced that they were the only ones competent to fulfill the contract, finally awarded it to them.

In September, 1908, Orville Wright arrived at Fort Myer, Va., and started demonstrating the Wright machine to interested Army officials. On September 9th, he moved his odd-looking mechanism out of its shed, and with only a little effort rose gracefully and easily into the air. In less than an hour he circled the parade ground 57 times at a height of about 100 feet. In the afternoon, he accomplished the first flight exceeding an hour's duration, completing 55 rounds in 62 minutes and 15 seconds. Later he took Lieut. Frank P. Lahm as passenger for a flight of six minutes and 42 seconds.

Continuing his exhibition flights, Mr. Wright on September 12th established a new duration record for pilot and passenger, although the plane was in the air only 9 minutes and 6 seconds. His passenger on this flight was Major George O. Squier, Signal Corps, who was Chief Signal Officer of the Army during the World War and was well known for his activities in the field of radio.

The first Army officer to meet his death in an airplane crash was Lieut. Thomas E. Selfridge of the Field Artillery. Flying as a passenger with Mr. Wright on September 17th, the plane went out of control, due to the breaking of the propeller, and crashed. Mr. Wright was severely injured and Lieut. Selfridge died a few hours after the accident. Further experiments in 1908 were discontinued.

1909

In July, the Wright Brothers returned to Fort Myer with a new airplane. Towards the end of that month, Orville Wright, with Lieut. Lahm as passenger, exceeded the duration requirement for this first Army airplane by remaining in the air for one hour, 12 minutes and 40 seconds. On July 30th, with Lieut. Benjamin D. Foulois as passenger, Mr. Wright, on a cross-country trip totalling ten miles, five with the wind and five against it, exceeded the speed requirement by averaging 42 miles per hour, which entitled him to a bonus of $5,000 over the contract price of $25,000.

Following the formal acceptance of the airplane by the U.S. Government, Orville Wright left for Germany while his brother Wilbur remained in this country to give flying instruction to Lieuts. Lahm, Foulois and Humphreys. The two first named officers completed the course, but Lieut. Humphrey was relieved from aviation duty and subsequently left the Army.

Army aviation as it existed in the latter part of 1909 boasted of a personnel of 3 officers and 10 enlisted men. The equipment consisted of one airplane, an airship, a free balloon, a small captive balloon, and a 200-ft. balloon and airship shed at Fort Omaha, Neb.

1910

At Fort Sam Houston, Texas, during the month of June, Lieut. B.D. Foulois made six flights in the Army's Wright airplane, the longest being one hour and two minutes. High winds and considerable rain prevented flights on most of the days.

Three instructors and 17 student officers of the Army Signal School from Fort Leavenworth were on temporary duty at Fort Omaha from May 10th to 15th. Captain Charles DeF. Chandler was ordered from Washington to Fort Omaha as instructor. Lectures were given, also practical instruction in the generation and compression of hydrogen, spreading and inflation of balloons. The Drachen captive balloon made several ascents, and there was one free balloon trip with Captain Chandler as pilot and Captain R.J. Burt and Lieut. W.N. Haskell as aids. Signal Corps Dirigible Balloon No. 1 was also used, being manned by Captain Chandler as pilot and Lieut. Haskell as engineer.

From June 1 to June 7, Lieut. Foulois made five flights at Fort Sam Houston, Texas, in gusty winds up to 15 miles per hour, varying in length from 5 to 14 minutes. No flights were made after June 7th, as the aeronautical detachment was sent to Leon Springs to assist in installing the annunciator buzzer system at that place.

Captain Arthur S. Cowan, Signal Corps, was placed in charge of the Aeronautical Division on June 1st, relieving Captain Chandler.

1911

The Senate passed the bill containing an appropriation of $125,000 for army aeronautics, previously passed by the House, on February 7th, and made $25,000 immediately available.

During July, the Army Wright machines were kept busy at College Park, Md., the site of the first Army Aviation School, established by the Signal Corps in June, 1911. No less than 127 flights were made up to July 20th, during which 56 passengers were carried. Flights over Washington from College Park occurred twice during the month by army aviators.

On July 6th, Lieut. Milling, when trying for a pilot's license, landed five feet from point marked as starting and landing point. On July 7th, an altitude of 3,260 feet was reached by Lieut. H.H. Arnold. Lieut. Milling with Lieut. Kirtland as passenger flew to Washington Barracks, D.C., landed, and flew back; highest altitude 2,200 feet. On July 10th, Lieut. Arnold with Lieut. Kirtland as passenger flew to Washington and returned, without intermediate landing; time 40 minutes; highest altitude, 2,400 feet. On July 18th, Lieut. Arnold, during a flight of 27 minutes, 35 seconds, reached an altitude of 4,167 feet. The following officers were on duty at the Signal Corps Aviation School, College Park: Captain C. DeF. Chandler, Commanding; Captain Paul W. Beck, Lieuts. R.C. Kirtland, Henry H. Arnold, Thomas DeW. Milling.

The U.S. Army Aviation Squad at College Park, Md., settled down more or less to a matter of routine. The aviators so far are Lieut. Milling, handling the Burgess-Wright plane; Lieut. Arnold, the straight Wright. Both of these officers were trained at the Wright factory at Dayton, Ohio. They have in turn trained Captain Chandler and Lieut. Kirtland.

The longest cross-country flight from the camp was to Frederick, Md., 41 miles, by Lieut. Arnold with Captain Chandler, to visit the National Guard camp there. They returned that night.

Captain Paul W. Beck is flying an 8-cylinder Curtiss. Lieut. Frank M. Kennedy, 10th Infantry, is to be the first Curtiss pupil. There is a good deal of rivalry between the Wright and Curtiss men.

The Signal Corps Aviation School departed from College Park on the afternoon of November 28th, and arrived at Augusta, Ga., at midnight on the 29th. Captain Chandler, Lieuts. Arnold, Kirtland, Milling and J.P. Kelley (Medical Reserve Corps) and 19 enlisted men of the Signal Corps made the trip in a special train of nine cars.

The Wright, Burgess-Wright and two Curtiss airplanes, and all other equipment pertaining to the school was taken along, including horses, wagons and mules.

The new site for the Aviation School during the winter is on the Barnes farm near the east boundary of Augusta. There are several hundred acres of level land used only for raising hay; these fields afford ideal conditions for the instruction of beginners. The average wind velocity of Augusta during the winter months is very low; and it is expected that many airplane flights will be made practically every day.

During the first week of December, the Aviation School got well started for the winter season. The Wright, Burgess-Wright and eight-cylinder Curtiss airplanes were assembled and flown.

The flights of special interest were: one around the city on December 7th at an altitude of 2500 feet by Lieut. Kirtland, and on the 9th both Lieuts. Kirtland and Arnold went around the city at an average altitude of 2500 feet.

On the 8th, Lieut. Arnold ascended to an altitude of 4100 feet. Lieut. Milling has been learning to fly the Curtiss type. His instruction began at College Park under the direction of Captain Beck.

During the fall of 1911, flying officers from College Park participated in flying meets, and were highly successful. One officer established a new world's endurance record of one hour and 53 minutes, flying with two passengers at the meet on Long Island. Three military airplanes were used during the maneuvers held in the vicinity of Bridgeport, Conn., during August, and thoroughly demonstrated the value of aerial reconnaissance. The first successful night flight was made at College Park in October.

1912

From January 14 to February 11, the officers at the Army School at Augusta, Ga., made 75 flights, totalling 24 hours, 33 minutes. The heavy fall of snow and bad weather prohibited a bigger aggregate.

Mr. Wilbur Wright was a visitor the last of January, and he cheerfully answered a steady flow of questions from the officers concerning prospective improvements in military airplanes and aviation in general.

On February 9th, Lieut. F.M. Kennedy, 10th Infantry, qualified for an aviation pilot license. The tests were made with a Curtiss biplane. On the same day, Lieuts. Kennedy and Arnold in the Wright plane flew over and around the city of Augusta at an altitude of about 1500 feet. Later in the afternoon, while starting in the fast Curtiss airplane, Captain Beck met with an accident which completely wrecked the machine. Fortunately, Captain Beck escaped without injury.

Lieut. Arnold was up for 59 minutes on January 25th, attaining an altitude of 4,764 feet. The Army aviators have agreed not to try altitudes above a mile, as that is sufficiently high for practical purposes.

The last day of flying at Augusta for the Aviation School was March 28th, after which the airplanes were packed for shipment and the loading of the cars proceeded for the next three days.

On the afternoon of April 1st, the School departed on a special train of ten cars, arriving at College Park on the afternoon of the 2nd. While at Augusta, the School made a total of 436 flights, having a total duration of 81 hours and 18 minutes. Out of the 124 days at Augusta, not including Sundays and the time engaged in packing or unpacking airplanes, the officers were flying 58 days. On some of these days, rain or high winds permitted a few flights only early in the mornings or late in the evenings.

The Signal Corps now owns 3 Standard Wright, 1 Burgess-Wright and 2 Curtiss airplanes, and there have been ordered 1 dual control Curtiss (lately delivered), 1 Burgess and 4 Wright machines.

During the week of March 17-24, the attention of the Army Aviation School was taken up principally with the tests of the new dual control Curtiss airplane designed especially as a military weight-carrying machine. Aviator Charles A. Walsh of the Curtiss Company did the flying and represented the manufacturer. During the trials Mr. Walsh made a total of 17 flights, and, in addition to these, the officers made 18. The speed of the new plane was 53.1 miles per hour, an excess of 8.1 miles over the 45 m.p.h. called for in the specifications. The two-hour endurance test was also exceeded, the plane maintaining continuous flight of 2 hours, 11 minutes, at 300 feet altitude.

The airplane shed of the U.S. Signal Corps at Manila, P.I., has been erected on the plains on the shore of Lake Laguna, near Fort McKinley, above five miles from Manila. Great flat lands which are covered with rice fields afford splendid landing spots. Lieut. Lahm has charge of the aviation work. The climate is most favorable.

An innovation in signal work in the Philippine Division has resulted from the fact that an airplane was received in February.

The machine is a type B, Wright airplane, 30 h.p., with floats, and a supply of spare parts. A hangar, 50' x 75', inside dimensions, with concrete floor, galvanized iron roof, sliding doors entirely across the front, and large enough to accommodate two assembled machines, was erected by the Quartermaster's Department on the reservation, adjacent to the polo field at Fort William McKinley, at a cost of $1,809.91.

First Lieut. Frank P. Lahm, 7th Cavalry, was detailed for temporary duty with the Signal Corps for aviation work, and entered upon this duty March 11, 1912. Two noncommissioned officers and four men of the Signal Corps, selected for their mechanical ability and especially for their experience with gasoline engines, were assigned to duty as mechanics.

The airplane was assembled and flown for the first time March 21st. Thereafter flights were made every morning. The total time in the air up to June 39th was 34 hours and 5 minutes.

On June 14th, Corporal Vernon L. Burge, Signal Corps, of the aviation detachment, successfully fulfilled the requirements of the International Aeronautical Federation for an aviation pilot's license, and on June 28th Lieut. Moss L. Love, Signal Corps, successfully passed the same test.

There are at present three aviators (Lieuts. Lahm and Love and Corp. Burge) in the Philippine Division and one airplane. Requisition has been submitted for two airplanes, one a high power machine suitable for use in connection with the defenses of Corregidor Island, the other a type "B", Wright machine suitable for use at maneuvers or wherever needed.

NOTE: Lieut. Love was killed in an airplane accident in 1913, and Love Field, Dallas, Texas, was named in his memory. Corporal Burge is now a Lieut. Colonel in the Air Corps.

During the year ending June 30, 1913, 1500 flights were made by officer aviators at the Aviation School at College Park. This number does not include the hops across the field by beginners.

In June, the first fatality occurred at College Park. Al Welsh, civilian flying instructor of the Wright Company, was sent there with a new type of military plane for demonstration purposes. During the course of a climbing test, when a dive preceded the climb, the airplane disintegrated in the air and crashed, resulting in the death of the pilot and his passenger, Lieut. Leighton W. Hazelhurst.

An accident at San Antonio, Texas, May 10, 1911, which resulted in the death of Lieut. C.E. Kelly, in whose honor the present field there is named, resulted in the suspension of flying activities there, and Captain Beck, the remaining pilot at San Antonio, was sent to College Park. Training activities continued at College Park throughout the summer, further experiments being conducted with radio and photography. Frequent flights were made to Washington Barracks, some twelve miles distant, where an auxiliary landing field had been constructed.

With the entire Air Service concentrated at College Park, the personnel comprised 12 officers and 39 enlisted men, and the equipment consisted of 12 Wright and Curtiss planes.

On September 24th, an order issued at the Signal Corps Aviation School at College Park, Md., announced the following organization:

Commandant: Capt. Charles DeF. Chandler, Signal Corps.

Secretary: 1st Lieut. Roy C. Kirtland, 14th Infantry.

Quartermaster: 2nd Lieut. Lewis C. Rockwell, 10th Infantry.

Commissary: 2nd Lieut. Frank M. Kennedy, 10th Infantry.

Surgeon: 1st Lieut. John P. Kelly, Medical Reserve Corps.

Officer Commanding Enlisted Detachment: Capt. Frederick B. Hennessey, 3rd Field Artillery.

Instructors: 1st Lieut. Kirtland; 2nd Lts. Henry H. Arnold, 29th Infantry; Thomas DeW. Milling, 15th Cavalry.

Summary Court Officer: 1st Lieut. Harry Graham, 22nd Infantry.

Other officers stationed at College Park in 1912 were Captain Paul W. Beck, 17th Infantry; 1st Lieuts. Harold Geiger, Coast Artillery Corps; Samuel H. McLeary and L.W. Hazelhurst, Jr.

An automatic machine gun was fired from an airplane on the College Park Field, demonstrating the possibilities of airplanes for offensive warfare. This is the first case known of the use of a machine gun from heavier-than-air flying machines. Other experiments were conducted with various signaling systems and a device for dropping explosives. Later, this device was taken to Europe, where it won first prize in the competition conducted by the French Army, the winning record being 12 out of 15 projectiles (15 pounds each) hitting a target 60 feet in diameter from an altitude of 656 feet; also 8 hits out of 15 on a target 125 by 375 feet from an altitude of 2,624 feet.

Two airplanes from College Park were sent to Connecticut for participation in the maneuvers during the month of August. As these machines were of the old type, it was impossible to carry observers, except under the most favorable conditions. As the conditions during the maneuvers were far from ideal, it was necessary for the operator to make his own observations in addition to piloting the machine. Under these disadvantages, however, the results were good. The information obtained was accurate and covered the whole field of operations.

Airplanes were used for the first time in the United States in connection with the observation of Field Artillery fire from November 5 to November 13, 1912. The airplanes were used to locate targets, give the range and direction from the battery, and locate the hits with reference to the targets, giving the necessary corrections.

There were three methods used to transmit information from the airplane to the firing battery. The first and most successful was radio telegraphy. By this means it was not found necessary for the airplanes to remain in special position with reference to the battery, as the airplanes can observe the effects of fire from front, rear, or either flank, and communicate with the battery without difficulty. Second, dropping cards. It is found necessary in this method for the airplane to remain over the battery when the cards are dropped. If the cards are dropped when the airplanes are some distance from the battery, there is considerable delay in obtaining the information. Third, the smoke-signal method. This was not found as successful as the other two on account of the churning of the air by the propellers of the machine and the lampblack accordingly dissipated. However, this method may be used for short distances very satisfactorily.

The tests proved conclusively that the use of observers in airplanes in connection with artillery fire at hidden targets is entirely practicable and furnishes means of reaching the targets which could not be found otherwise.

When the airplane ascended to an altitude of about 2,000 feet it was possible to see the reverse side of slopes of hills and locate targets thereon that could be found in no other way, and when the battery opened fire the position of hits could be located much more accurately and the range corrected by this kind of observation with more certainty than by any other means of fire control tried so far.

Delivery was made by the Wright and Curtiss companies of scout airplanes of the latest type up to that time, and the first tests of machines under these new specifications were held during October and November at Fort Riley, Kansas.

In November, for reasons of climate, the training school at College Park was discontinued for the winter, and during the winter months the aviation school was again conducted at Augusta, Ga. There were five officers present for duty and seven airplanes for instruction purposes, including a Burgess-Wright tractor.

At San Diego, Calif., there had been established a temporary school of instruction, for the use of which the Government paid nominal rental, and instruction was carried on with hydroairplanes and flying boats.

Four officers detailed for aviation duty with the Signal Corps and who reported at College Park, were ordered to the factories and schools of manufacturers for preliminary instruction. Lieuts. Park, Goodier and Brereton proceeded to Hammondsport, N.Y., and Lieut. Call to Marblehead, Mass.

September 28, 1912, marked the second fatal accident at College Park, when Lieut. Lewis C. Rockwell and his passenger, Corporal Frank Scott were killed as the result of a crash. It appears that the pilot misjudged his distance from the ground and failed to bring his airplane out of a glide in sufficient time to clear the ground.

NOTE: Further data on the early days of military aviation in the United States will be published in a future issue of the News Letter.

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The England-Johannesburg Flight

(Continued from Page 12)

Lake Tanganyika. Their plane was considerably damaged, but they escaped injury.

Tragedy marked the flight of the team of Messrs. Waller, Findlay, Peachey and Morgan. After their plane had landed at Abercorn, Northern Rhodesia, in poor visibility, the wind changed so that the only possible take-off was both uphill and towards some trees. Had they been flying in anything but a race, Findlay and Waller would have waited for the wind to veer again, particularly as Abercorn is at an altitude of 6,000 feet. Unwilling to delay their take-off and believing that the run would be ample to clear the field, the start was made, but it proved a fatal decision. The plane struck the trees and both Captain Max Findlay and Mr. A.H. Morgan, radio operator were so severely injured in the crash that they died almost at once. Mr. Ken Waller and Mr. Derek Peachey, passenger, suffered minor injuries.

Captain Halse seemed to be a certain winner of the race, for in 35 hours when he covered some 5,300 miles, he had maintained a long lead over his nearest competitor. When he arrived at Kisumu he was very tired and suffered from air sickness. Stopping at M'Beya for an hour's rest, he took off for Salisbury and almost reached there as darkness was falling. Bush fires confused him and, rather than risk a forced landing while looking for Salisbury as his fuel was running low, he landed on a plowed field in the dusk. The mud clogged his landing wheels to such an extent that the plane overturned. He escaped severe injury.

A.L. Clouston, who arrived at Belgrade first; and was in second place when he reached Cairo, still found himself second at Khartoum in the Sudan. Here he had engine trouble and parts were flown to him from Cairo and repairs made. After three days' delay he took off and arrived at Abercorn. He reported that he was forced to proceed in easy stages, as a forced landing at Masindi had left his plane and engine in a bad condition. He nevertheless hoped to reach Johannesburg several hours before the time expired. He stopped at M'pika, Rhodesia, and had another forced landing at Mtoko, due to exhaustion of fuel. Overdue by several hours at Johannesburg, he was later found with his wrecked machine about 150 miles south of Salisbury.

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THE FIRST AMERICAN MILITARY AIRPLANE

The specifications for the first Army airplane, Signal Corps Specification No. 486, were as follows:

Advertisement and Specification for a Heavier-than-Air Flying Machine.

To the Public:

Sealed proposals, in duplicate, will be received at this office until 12 o'clock noon on February 1, 1908, on behalf of the Board of Ordnance and Fortification for furnishing the Signal Corps with a heavier-than-air flying machine. All proposals received will be turned over to the Board of Ordnance and Fortification at its first meeting after February 1 for its official action.

Persons wishing to submit proposals under this specification can obtain the necessary forms and envelopes by application to the Chief Signal Officer, United States Army, War Department, Washington, D.C. The United States reserves the right to reject any and all proposals.

Unless the bidders are also the manufacturers of the flying machine they must state the name and place of the maker.

Preliminary.- This specification covers the construction of a flying machine supported entirely by the dynamic reaction of the atmosphere and having no gas bag.

Acceptance.- The flying machine will be accepted only after a successful trial flight, during which it will comply with all requirements of this specification. No payments on account will be made until after the trial flight and acceptance.

Inspection.- The Government reserves the right to inspect any and all processes of manufacture.

GENERAL REQUIREMENTS

The general dimensions of the flying machine will be determined by the manufacturer, subject to the following conditions:

1. Bidders must submit with their proposals the following:

(a) Drawings to scale showing the general dimensions and shape of the flying machine which they propose to build under this specification.

(b) Statement of the speed for which it is designed.

(c) Statement of the total surface area of the supporting planes.

(d) Statement of the total weight.

(e) Description of the engine which will be used for motive power.

(f) The material of which the frame, planes, and propellers will be constructed. Plans received will not be shown to other bidders.

2. It is desirable that the flying machine be designed so that it may be quickly and easily assembled and taken apart and packed for transportation in army wagons. It should be capable of being assembled and put in operating condition in about one hour.

3. The flying machine must be designed to carry two persons having a combined weight of about 350 pounds, also sufficient fuel for a flight of 125 miles.

4. The flying machine should be designed to have a speed of at least forty miles per hour in still air, but bidders must submit quotations in their proposals for cost depending upon the speed attained during the trial flight, according to the following scale:

40 miles per hour, 100 per cent.
39 miles per hour, 90 per cent.
38 miles per hour, 80 per cent.
37 miles per hour, 70 per cent.
36 miles per hour, 60 per cent.
Less than 36 miles per hour rejected.
41 miles per hour, 110 per cent.
42 miles per hour, 120 percent.
43 miles per hour, 130 per cent.
44 miles per hour, 140 per cent.

5. The speed accomplished during the trial flight will be determined by taking an average of the speed over a measured course of more than five miles, against and with the wind. The time will be taken by a flying start, passing the starting point at full speed at both ends of the course. This test subject to such additional details as the Chief Signal Officer of the Army may prescribe at the time.

6. Before acceptance a trial endurance flight will be required of at least one hour during which time the flying machine must remain continuously in the air without landing. It shall return to the starting point and land without any damage that would prevent it immediately starting upon another flight. During this trial flight of one hour it must be steered in all directions without difficulty and at all times under perfect control and equilibrium.

7. Three trials will be allowed for speed as provided for in paragraphs 4 and 5. Three trials for endurance as provided for in paragraph 6, and both tests must be completed within a period of thirty days from the date of delivery. The expense of the tests to be borne by the manufacturer. The place of delivery to the Government and trial flights will be at Fort Myer, Va.

8. It should be so designed as to ascend in any country which may be encountered in field service. The starting device must be simple and transportable. It should also land in a field without requiring a specially prepared spot and without damaging its structure.

9. It should be provided with some device to permit of a safe descent in case of an accident to the propelling machinery.

10. It should be sufficiently simple in its

construction and operation to permit an intelligent man to become proficient in its use within a reasonable length of time.

11. Bidders must furnish evidence that the Government of the United States has the lawful right to use all patented devices or appurtenances which may be a part of the flying machine and that the manufacturers of the flying machine are authorized to convey the same to the Government. This refers to the unrestricted right to use the flying machine sold to the Government, but does not contemplate the exclusive purchase of patent rights for duplicating the flying machine.

12. Bidders will be required to furnish with their proposal a certified check amounting to ten per cent of the price stated for the 40-mile speed. Upon making the award for this flying machine these certified checks will be returned to the bidders, and the successful bidder will be required to furnish a bond, according to Army Regulations, of the amount equal to the price stated for the 40-mile speed.

13. The price quoted in proposals must be understood to include the instruction of two men in the handling and operation of this flying machine. No extra charge for this service will be allowed.

14. Bidders must state the time which will be required for delivery after receipt of order.

JAMES ALLEN,
Brigadier General,
Chief Signal Officer of the Army.

Signal Office,
Washington, D.C., December 23, 1907.

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REPORT OF BOARD ON TRIALS OF WRIGHT PLANE

Apprized of the fact that it was proposed to publish in the News Letter from time to time data connected with the early history of U.S. Army aviation, Colonel Charles DeF. Chandler, U.S. Army, Retired, furnished the Information Division, Office of the Chief of the Air Corps, a copy of the proceedings of a Board of Officers convened to observe the trial of the Wright airplane under Specification No. 486, as previously quoted.

The proceedings of this Board are quoted below, as follows:

'WAR DEPARTMENT
Office of the Chief Signal Officer
Washington
August 2, 1909.

PROCEEDINGS OF THE BOARD OF OFFICERS CONVENED BY OFFICE MEMORANDUM NO. 18, OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, DATED JUNE 21, 1909, FOR THE PURPOSE OF OBSERVING TRIALS OF AERONAUTICAL DEVICES, ETC.

The Board met, pursuant to the call of the President, at 9:30 A.M., July 31, 1909, at the Office of the Chief Signal Officer of the Army, and from time to time previously in connection with the duties prescribed for it.

The Board conducted the official tests of the aeroplane furnished by the Wright brothers of Dayton, Ohio, under contract with the Signal Corps, according to Signal Corps Specification No. 486.

Having been notified by the Wright brothers that they were ready for the endurance tests prescribed by paragraph 6 of the above-named specification, this test was carried out on the afternoon of July 27, 1909, at Fort Myer, Virginia.

The aeroplane made a flight, with Mr. Orville Wright as aviator and carrying First Lieutenant Frank P. Lahm, Signal Corps, (a member of the Board) as passenger, which lasted one hour, twelve minutes, and forty seconds, and in the opinion of the Board complied with the specification in every respect as far as the endurance test is concerned, which test required the machine to remain in the air but one hour.

The speed test prescribed in paragraph 5 of the above-named specification was carried out on the afternoon of July 30, 1909, between Fort Myer, Virginia, and Shuter Hill, Alexandria, Virginia, over a measured course of five miles across broken country. The Board was divided into two committees, one stationed at the starting point, Fort Myer, Virginia, the other at the turning point near Alexandria, Virginia, and determined the intervals of time independently for the passage from Fort Myer, Virginia, to Alexandria, and again from Alexandria to Fort Myer, the starting point. After careful consideration of the data obtained by the individual members, the Board finds, under paragraph 5 of the specification, as follows:

Speed from Fort Myer, Virginia, to Alexandria end of course	37.735 miles per hour
Speed from Alexandria end of course to Fort Myer	47.431 " " "
Average speed, according to contract	42.583 " " "

There being no further business before it, the Board adjourned at 10:30 o'clock A.M.

GEORGE O. SQUIER,
Major, Signal Corps, U.S.A.,
President.

C. McK. SALTZMAN,
Major, Signal Corps, U.S.A.,
Member.

C. DeF. CHANDLER,
Captain, Signal Corps, U.S.A.,
Member.

G. C. SWEET,
Lieutenant, U.S.N., Member.

FRANK P. LAHM,
First Lieutenant, Signal Corps, U.S.A.,
Member.

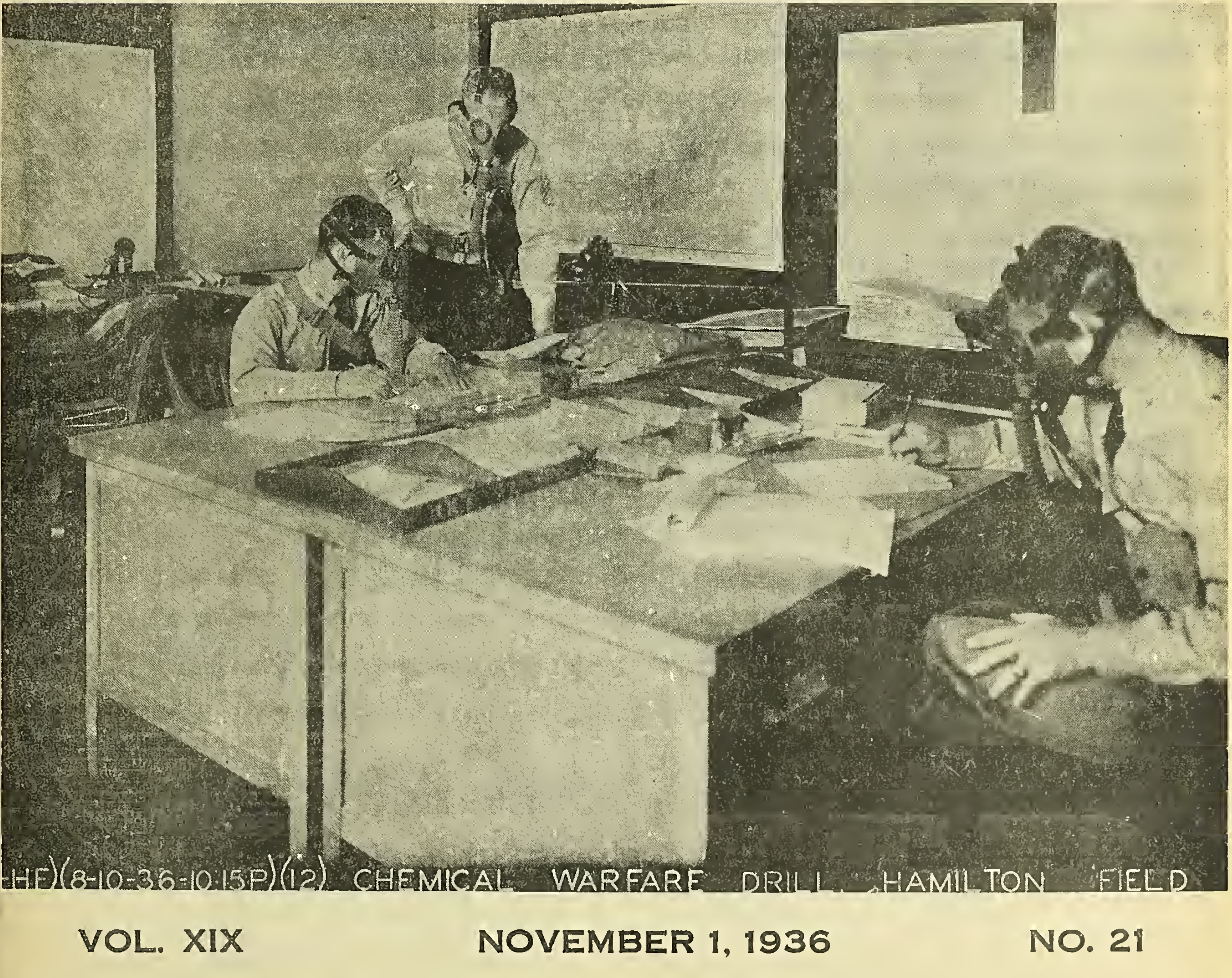
BENJ. D. FOULOIS,
First Lieutenant, Signal Corps, U.S.A.,
Member.

F. E. HUMPHRIES,
Second Lieutenant, Corps of Engineers, U.S.A.,
Recorder.

AIR CORPS

NEWS LETTER

Issued by the Chief of the Air Corps
Washington, D. C.



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VOL. XIX NOVEMBER 1, 1936 NO. 21

VOL. XIX Air Corps News Letter NO. 21

Information Division
Air Corps
November 1, 1936
Munitions Building
Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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TACTICAL EMPLOYMENT OF AERIAL PHOTOGRAPHY

By Captain Roland Birnn, Air Corps

THE degree to which aerial photography may be employed in the ground or air forces is dependent upon the production capacity of the photographic agencies with the forces in question. These photographic agencies fall under the heading of that often mentioned phrase - "means available" - and include all units which are necessary in the taking of the aerial photograph, its conversion into a print or series of prints, and even the conversion of a number of prints (mosaic) into a map. They are:

With Air Corps

Observation Group	1 Photo Section 1 Off. 50 E.M.
Observation Squadron (Separate)	1 Photo Section 1 Off. 20 E.M.
Bombardment Group	1 Photo Section 1 Off. 10 E.M.

Reconnaissance Squadron (Air Force) - a tentative organization but if adopted will probably be equipped for photography. If made an organic part of each Bombardment Squadron it may result in increase in size of Bombardment Group Photo Section.

With Ground Forces

Infantry or Cavalry	Brigades or Divisions	Reinforced, when on independent missions:- Photo Section of Observation Squadron (Separate) which would be normally attached.
Corps		Photo Section of Organic Observation Group.
Field Army		Photo Section of Organic Observation Group. Photo Company of Army Signal Unit. Engineer Topographic Battalion. Plus Photo Section with the Several Corps' Obs. Groups.

The Topographic Battalion with the Field Army would probably be equipped with an aero-cartograph and a multiplex outfit and therefore capable of transforming a photo mosaic into a well contoured and controlled map.

The Photo Company with the Army Signal troops would concern itself primarily with ground photography, but its facilities would certainly be available for emergency work in developing and printing new photos and repairing aerial cameras.

The Aerial Photograph

Nothing more than a machine-made, but man-interpreted substitute for maps or for visual reconnaissance. When we break that down we see that aerial photography is employed tactically as follows:

Employment of Aerial Photography

1. Substitute for Maps.
2. Furnish Details on Existing Maps.
3. Detect Enemy Camouflage.
4. Determine Adequacy of our own Camouflage or cover.
5. Substitute for Visual Reconnaissance for following reasons:
   a. Comparative safety of photo missions.
   b. Comparatively better appreciation of military indications by trained intelligence personnel.
   c. Less interference by ground haze.
   d. Comparatively less time to cover a certain area.
6. Furnish accurate record of aperiodic changes.
7. Allow detailed study of projected bombardment subject.
8. Confirm efficacy of artillery or bombardment operations.

Interpretation of Aerial Photographs

The interpretation of aerial photos is the job of trained intelligence personnel in corps or higher units. In the Air Corps we should find such personnel in the GHQ Air Force G-2 Section.

Yet every person supplied with an aerial photo will, or must, make studies thereof and interpret those details in which he is primarily interested. The Bombardment Group Commander is certainly able and willing to interpret photos of destruction wreaked by his bombers; these photos, let us say, having been taken by a reconnaissance squadron in his group and developed and printed in his organic photo section.

Photo interpretation is covered in Training Regulations 210-10.

Limitations of Aerial Photography

Photography must not be thought of as

a panacea, or cure-all, for the ills of practical aerial observation. The commander will do well to understand these limitations before embarking on an ambitious photographic enterprise, or resorting too quickly to the camera when visusl observation or existing maps do not come up to his expectations.

The aerial photo of a wooded area seldom shows trails or roads through such woods. Here, low-flying visual reconnaissance, or better yet, ground reconnaissance, is necessary to fill in such valuable means of communication. Visual reconnaissance is still the best method of conducting artillery adjustment. Surveillance of moving troops, fleets, trains, etc., is best conducted visually.

Also, it takes time to develop photographs and print them so that they may be interpreted without error. Not only the actual time of developing and printing must be considered, but also the time of taking the camera from the plane to the photo hut and the print from the hut to the interested commander. An onserver's report of a visual reconnaissance mission can often be dropped directly from the airplane to the CP of the commander concerned.

Aerial photography means the use of one more piece of expensive, complicated, and none too plentiful item of procurement - the aerial camera.

Details of Tactical Employment of Photography

1. Substitute for Maps.- We are prone to think of the United States as completely mapped on the Gettysburg or Leavenworth basis, yet until emergency Federal units recently started mapping work, only about 46% of this country had been carefully mapped. Some of these maps were 50 years old. We could say, roughly, that only about 25% of the country was satisfactorily mapped.

Some of our service school maps have the legend, "surveyed in 1902," or "edition of 1911" or "1918."

How much of Siberia is mapped? Or China, Canada, or Mexico? The answer is "very little."

Situation.- A Field Army is advancing into unmapped territory of which little is known. Obviously, the army commander would request, and probably be furnished, more than the one organic Topographic Battalion to enable him to keep the supply of maps up to the demand therefor. But let us further imagine the enemy barring the operations of our ground reconnaissance units with their topographic personnel attached.

The solution appears to be to concentrate on mosaic mapping; the Air Corps to take the photos and the Engineers to convert them into maps and distribute them.

2. Furnish details on Existing Maps.- We may expect to find aerial photographs used to a great extent to furnish details on existing maps.

It should be borne in mind that:

Not all existing maps are on such large and readable scale as 1/21,120.

Mere enlargement of a map will not furnish any more details on such map, and

Not all maps are up-to-date.

An artillery commander is given the mission to "harass enemy reserves beyond Wolf Hill." There are insufficient airplanes or balloons on hand to furnish artillery adjustment for the artillery unit given that mission. Ground observation posts do not allow observation on all parts of the woods NW of Wolf Hill (see Gettysburg, 3" = 1 mile, map). Reserves would normally be held under cover in the woods. The map shows the extent of woods to the NW of the hill, but the map was made in 1925, over 11 years ago. Due to lack of observation, both ground and air, map firing is necessary. As this form of firing is at best wasteful of ammunition, the artillery commander will use every endeavor to place his fire where the enemy reserves are: in the wooded areas only, without firing into too general an area. He is furnished an aerial photo made some time previously of the Wolf Hill area.

If there is one thing in which an aerial photo excels, it is that of showing wooded areas very clearly. Using recognized points on Rock Creek and State Highway No. 231 on the photo for control points, the artilleryman is able to determine the scale of the photo and its position on the map. As it is in an "odd" scale, he does not grid the photo, but prefers to transfer the outlines of the wood patches to the map which he uses for his firing data.

3. Detect Enemy Camouflage.- Air photos are invaluable in this work. Camouflage is often so effective that it is not detected by the eye of an observer at normal working altitudes. A stereoscopic examination of a photo of a suspected point or area will often disclose the height dimension.

Photographs, while invaluable, are not infallible. This brings to mind the following use for air photos:

4. To Determine the Adequacy of Our Own Camouflage or Cover.- When an establishment, certain materiel or body of troops are so well camouflaged that they cannot be detected in a photo of their area, their commander knows two things:

a. Further expenditure of effort or material is hardly necessary, and

b. It is quite probable that his troops, etc., will not be picked up by the enemy (unless, of course, motion invalidates the effect of the camouflage).

5. Substitute for Visual Reconnais-

sance, due to:

a. Comparative Safety.- One of the faultiest bits of air observation technique in time of peace is that of hovering about the observed area, to enable the observer to make a thorough survey of the terrain; especially over a (simulated) enemy position. No account is taken of the probability that, in time of war, the enemy would be shooting real, and not simulated, bullets at the observation airplane.

Situation.- Very effective antiaircraft machine gun fire is being encountered from a ridge in enemy territory, making exceedingly costly in airplane and flying personnel, the aerial observation of that ridge. Enemy entrenchments are suspected along the ridge, and the observation teams have been given the mission of locating such entrenchments or confirming their absence. This calls for low-altitude missions on account of the wooded nature of the ridge. Low altitude flying results in the airplanes being easy targets for the enemy ground gunners.

Solution.- A low altitude photo mission, flown just once, at high speed along the ridge; a strip mosaic or a series of obliques at the suspected line.

The resultant photos can then be:

b. Studied by Experts at Leisure.- There is no doubt but that the average Air Corps officer with any considerable observation experience would make a better-than-average observer such as was found in the various air services during the World War. Yet very few of them could pick up, from the air, the difference between a Type A or Type B troop train, or between a regiment of 155-mm. howitzers or 155-mm. guns on the road.

An aerial photo of such subjects, however, would allow a thorough study by presumably experienced intelligence personnel equipped with reference data, measuring instruments, reading glasses, etc. Where there was doubt as to interpretation, others could be called in for consultation.

c. Advantages During Ground Haze.- The infra-red filter, now in use, when placed over a camera's lens will penetrate a fog or haze which is absolutely impenetrable to the human eye. An aerial photo can easily be taken, using such a filter, through a light fog 500 feet thick.

Night photography is somewhat in this category. One sharp flash of the flare-bomb and a click of the camera's shutter might make possible a record of things on the ground which could not be collected by visual reconnaissance without the aid of more parachute flares than one plane could carry, provided the photo-plane crew had first located the objective and pointed the camera at it.

D. Aerial Photography May Save Time.- Air photos may be used to gather information when time is a vital factor. Against the time required for an observer to make a sketch, count the number of trucks on a road, gauge the road-length of a column, etc., must be balanced the time required to develop and print the photographic shots of these subjects, provided photographs are as acceptable to the commander as the observer's report and description. In this respect an observer's report will often accompany a photograph, thus orienting the photograph and further describing event thereon.

One often reads articles describing quick-process photographic printing and developing. It has been the experience of the military that time saved in turning out a print is often lost by its poor quality making interpretation of details difficult, or by the impossibility of rapidly reproducing extra copies. The commander should bear this in mind in ordering photographs "in a hurry," or a large number of copies. Wet prints have been turned out in 20 minutes or less. However, they are wet prints and not comparable in quality to prints turned out in $1\frac{1}{2}$ hours or more. Much progress has been made in speeding up these processes, but there are many links (men and processes) in the chain of photo production from the time the airplane lands until the print is delivered to the commander concerned. One slow man, or a delay in a process slows up the time of delivery. "Minimum time", shown below, has been bettered many times, but we are considering here actual field service conditions with equipment now on hand.

The following table shows reasonable time requirements for photo missions from time of order to delivery of print:

	Minimum	Normal	Small Strip Mosaic
Transmittal of order, and preparation for mission.	:05	:20	:45
Flying time: (average)	:30	1:00	2:00
Delivery from landed plane to photo hut	:05	:10	:10
Develop, wash, print, assemble	:40	1:30	2:00 (Minimum)
Delivery to Division Commander	:10	:20	:20
Total	1:30	3:20	*5:15

*A strip mosaic - 6000 feet altitude. Scale - 1/6,000 Exposures - 200.

50% overlap in line gives covered area of 70 miles x .85 miles (   ) or (30% overlap laterally - 3 strips) = 23 x $1\frac{3}{4}$ miles gives a good photo strip of Susquehanna River and its banks from Harrisburg Bridge to Marietta.

6. Photographs Present Accurate Record of Status.- Enemy operations are often estimated by the deviations of the enemy from the normal or routine. The same observer covering an area day after day can efficiently compare daily or other periodic activities of the enemy in a certain area or along a certain route. However, it is unwise to count on the continued availability of any one observer. A number of photographic records of activity along a route or in an area taken at regular intervals of time can be compared by intelligence personnel without recourse to lengthy observer's reports gathered by different observers with varying standards of proficiency and experience and through the dint of considerable flying time over enemy territory.

7. Photographs Allow Detailed Study of Possible Bombardment or Attack Aviation Objectives.- Objectives important enough to be attacked are often important enough to their possessors to be defended. One photographic airplane flying past with the observer taking photographs might not draw the fire of anti-aircraft artillery defenses, as the latter desire to maintain the secrecy of their emplacements; unless sure of bringing down their target. A lengthy surveillance or aerial inspection (hovering) would be more likely to draw fire, especially where the bombardment or attack commander or his S-2 or S-3 would come low enough to take in details visually, thereby presenting a most favorable target.

An aerial photograph, or series of photographs, of an objective could be examined by the commander and his staff in preparation for an attack against such objectives, with a minimum danger to the personnel concerned.

8. Confirm Efficacy of Bombardment of Artillery Operations.- Photographs of such operations, taken by accompanying airplanes, serve two purposes:

a. Irrefutable evidence of claims made by the commander concerned, and
b. Allow a study of projected operations against undamaged portions of the objective or target.

In other words, "one picture is often worth 10,000 words."

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Being somewhat of a large squadron and sometimes assuming the appearance of a combination mobilization and recruiting depot, the 5th Air Base Squadron at Hamilton Field, Calif., under the command of Lieut. Colonel Calvin E. Giffin, Air Corps, and consisting of 312 men, is rapidly rounding into shape.

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airplanes recently placed in service have shrunk the map of the United States, and now it is only 15 hours from coast to coast, and New York 8 hours from Miami.

ANOTHER ERRAND OF MERCY IN PANAMA

"Aerial ambulance work in this land of no highways and no railroads is not infrequent, says the Albrook Field Correspondent, and he then goes on to say that "Colonel N.W. Campanole, Military Attache to Central America, recently required an immediate operation. But - he was in San Jose, Costa Rica, and good hospital facilities were in Panama. Our Bellanca transport was the only answer, and on October 22nd Captain C.A. Ross flew it to Costa Rica, accompanied by Lieut. G.L. Mason in a P-12. Due to the great areas of uninhabited jungle in Central America, a ship never goes cross-country unaccompanied - just in case.

The flight up was uneventful, but on the return trip bad weather forced the two ships down at Puerto Armuelles, about 250 miles East of Panama City. The next day the trip was completed, and Colonel Campanole was taken to Gorgas Hospital, where he successfully underwent an operation.

Captain Ross did a fine job in taking the heavily loaded Bellanca out of the poor field at San Jose, and a poorer field at Puerto Armuelles - and therefore receives our nomination for Bellanca Pilot, First Class."

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COAST ARTILLERYMEN STUDY AIR TACTICS

Five officers from the 63rd Coast Artillery at Fort MacArthur, Los Angeles Harbor, learned all about the Air Corps recently at March Field. At any rate, they absorbed as much as they could during a two weeks' contact course. The quintet of anti-aircraftmen were Majors P.J. Lloyd, A.M. Laurence, D.M. Griggs, 1st Lieut. H. McFeeley and 2nd Lieut. Foster Murphy.

Flying in Bombardment and Attack planes in the afternoon and studying ground maintenance technique and tactic in the morning, the five Coast Artillerymen did not find time hanging too heavily on their hands. Their instructor-in-chief, Major Early E.W. Duncan, reports that they were so enthused with their course that they borrowed several texts on Attack and Bombardment tactics that they might become more thoroughly versed in the science of air fighting.

One of their most interesting mornings was spent in the 23rd Photographic Section under the guidance of the section commander, 1st Lieut. Kenneth B. Hobson. The study of the processes necessary to produce photographs and mosaics of "enemy" areas enabled the officers to visualize the amount of man hours necessary to produce air photographs for the ground arms. The training had a peculiar significance, placing these officers in the role of air attackers instead of ground opponents of Bombardment airplanes.

MANEUVERS OF 30TH BOMBARDMENT SQUADRON

Flushed with health and renewed enthusiasm, the officers and enlisted men of the 30th Bombardment Squadron returned to their home hangar at March Field, Calif., on October 13th, after what they termed an enjoyable ten days at the Long Beach Airport. They attributed their health and high spirits to the cool temperatures of the famous beach resort and the healthfulness of living under canvas.

Major Albert F. Hegenberger, Air Corps, well known pilot and navigator of the "Bird of Paradise" transport plane on the first successful flight to Honolulu in 1927, is the commanding officer of the 30th Squadron. At the conclusion of the maneuvers he stated:

"Our maneuvers and range practice in the Pacific Ocean off Long Beach have been attended with success. Two of our enlisted gunners, Staff Sergeant Morris D. Smith and Sergeant Charles L. Hunley, were given experts' ratings as a result of their good work at the bomb releases. A total of 207 bombs were fired."

Major Hegenberger and other members of his squadron commented with enthusiasm on the favorable reception given to the organization by the citizens of Long Beach and the lengthy publicity given it.

The First Wing Headquarters at March Field assumed that an enemy fleet was lying several miles off Long Beach. Brigadier General Delos C. Emmons, deciding to remove this menace, ordered that the Thirtieth move its eight Martin Bombers, 90 enlisted men, 4 flying cadets and 11 officers to the Long Beach Airport and bomb the enemy ships.

To simulate the fleet of the enemy and to provide a good target for the Coastal Cops, as they are colloquially known in Southern California, aluminum powder flasks were dropped on the Pacific Ocean, making spots the approximate size of the target to be bombed. These were dropped by airplanes of the Squadron immediately preparatory to the bombing.

One hundred-pound bombs, composed of water and sand without powder, were used. The splash was enough to tell the bombardiers whether or not they had scored a hit. Air machine gunnery on sleeve targets was another activity of the Squadron at which some measure of success was obtained.

Four planes each were assigned to Flight "A," commanded by 1st Lieutenant Herbert G. Montgomery, and to Flight "B," in charge of 2nd Lieutenant John P.T. Hills. Administration, supply and the mess were supervised by 2nd Lieut. Wilson H. Neal. The engineering and chemical-armament officer was 2nd Lieut. William W. Gross, while operations and intelligence was under 2nd Lieut. Albert T. Wilson.

Other maneuvers which Lieut. Colonel Hubert R. Harmon, commander of the 19th Bombardment Group, has announced for his unit include those of the 32nd Bombardment Squadron, October 19th to 24th, at Long Beach. The entire 19th Bombardment Group will encamp at the Bakersfield Airport from November 2nd until the 7th. The 19th consists of 15 planes and 250 enlisted men, with about 40 officers. The organizations composing it are the 19th Bombardment Group Headquarters Squadron, the 30th and 32nd Bombardment Squadrons and the 38th Reconnaissance Squadron.

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GHQ INSPECTORS VISIT HAMILTON FIELD

Inspecting officers of the GHQ Air Force arrived at the Hamilton Field Air Base on September 30th for their annual inspection, remaining for six days, during which time they inspected records and noted the efficiency of the personnel in the operation of this air base. The party was headed by Lieut. Colonel Robert Olds, Inspector, GHQ Air Force, Langley Field, Va. Upon the completion of the inspection, the party left for March Field, the next inspection point.

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SURPRISE VISIT BY GENERAL BRANT

Brigadier General Gerald C. Brant, Wing Commander, 3rd Wing, GHQ Air Force, Barksdale Field, La., paid a surprise visit to the Hamilton Field Air Base on the afternoon of October 5th when, after flying from Sand Point Field, Seattle, Washington, he set his Northrop Attack plane down on the field for an overnight stay. He was enroute to his command at Barksdale Field, having completed over half of his extended navigation training flight.

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MODEL AIRPLANE FLIGHTS AT MOFFETT FIELD

Large crowds from the San Francisco Bay area display considerable interest in the model airplane flights and contests which are held at Moffett Field, Calif., every week. In the contest held on Sunday, October 11th, one young fellow was flying a gas powered job which had been flown approximately 155 hours. Due to undetermined causes, the plane failed to gain sufficient altitude to clear the airship hangar, struck head on and crashed to the ground a complete wreck.

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Lieut. Colonel Richard H. Ballard, Air Corps, was recently appointed Commanding Officer of France Field, Panama Canal Zone, his previous duties as Post Operations Officer being taken over by Lieut. William H. Tunner. Major Willis R. Taylor was appointed C.O., 7th Observation Sqdn.

SEARCHLIGHT PRACTICE AT MARCH FIELD

RED hat corded soldiers from Fort MacArthur's anti-aircraft unit, the 63rd Coast Artillery, braved the late and somewhat unseasonal heat of March Field in September and the first half of October for their annual searchlight practice. It was expected that the summer heat would abate during the autumn, but the Fahrenheit reading at one time during the encampment crept up to 106 degrees, the hottest September day at March Field since 1932, when it was 108.

Officers of Battery "A," of the 63rd, the official designation of the searchlight unit, were pleased with the good showing made by the battery. They stated that the sky probing unit was hampered by two factors, the great number of recruits acquired during the calendar year and the over age status (ranging from 1925 to 1929) of the searchlights competing with 1936 airplanes.

In the course of the preliminary practice, only one Bomber, the command plane of the First Wing Headquarters Squadron, or one from the 19th Bombardment Group, was used in the nightly problem. Many persons from Riverside, Redlands and other surrounding communities were enthralled by the beauty of the huge pencils of lights piercing the darkness, finally fastening themselves on a Martin Bomber. These six lights used eight hundred million candle power each. So powerful were the lights that they were easily discernible from Riverside, ten miles away.

In the final or record problem, twelve planes were employed with the approximate hour of arrival unknown to the ground defenders of March Field. While six swift, low diving Attack planes endeavored to put the mechanical ears or sound locators out of business and blot out the searchlights, the six Bombers from the 19th Bombardment Group roared down on March Field intent on its "destruction."

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RETIREMENT OF SERGEANT WEBB.

First Sergeant Orvil E. Webb, of Headquarters and Headquarters Squadron, 8th Pursuit Group, GHQ Air Force, Langley Field, Va., was retired on September 30, 1936, following the completion of over 30 years of honest and faithful service in the United States Army.

Sergeant Webb first entered the service on the 10th day of August, 1907, and since that date has served in the Infantry and the Air Corps.

The best wishes of all the personnel of Headquarters and Headquarters Squadron, 8th Pursuit Group, go with Sergeant Webb on his well earned retirement.

MORE "DOPE" ON 30TH BOMB. SQD. MANEUVERS

The Scribe for the 479th Pursuit Squadron, Air Reserve, Army Air Base, Long Beach, Calif., writing under date of October 16th, says that "Last week the new runways on the east end of the airport were officially opened to traffic, and the Army end of the Municipal Airport took on the semblance of war as the 30th Bombardment Squadron from March Field arrived and took over that end of the field as a base for ten days of field exercises.

Major Albert F. Hegenberger, Commander of the 30th, brought over some thirteen officers and ninety enlisted men, not to mention the flock of Martin Bombers and field equipment. The primary purpose of the exercises was gunnery practice - to fire for record, but upon arrival the Major found some one had sent him some 270 bombs, so he decided the best thing to do was to take them out and drop them on the ocean, and thereby gain some very desirable experience on 'studied pattern bombing in formation.' Four officers fired for record, two making "Expert" and two 'Marksmen.' At luncheon on October 9th, the Major entertained officials of the Chamber of Commerce and the Aviation Commission. The latter assured their host that a bigger and better field is being planned and that when he comes over for future exercises there will be more room and more runways.

The 30th Squadron took off for their home station late Tuesday (October 13th), stating they were very well pleased with their operations, having flown 220 hours without an accident of any kind."

The News Letter Correspondent added that on October 19th the 32nd Bombardment Squadron from March Field will follow-up, staging their field exercises by the still glowing camp fires left by the 30th Squadron.

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NEW TRANSPORT FOR SAN ANTONIO AIR DEPOT

On October 9th, the San Antonio Air Depot, Duncan Field, Texas, received its anxiously-awaited new C-33 Transport, the first in that Supply Area, from the Douglas Aircraft Company, Santa Monica, Calif. It was ferried to the Depot by Captain D.J. Ellinger, Operations Officer of the Depot, pilot, with Master Sergeant C.P. Smith as co-pilot, and Staff Sergeant C.E. Bright and Corporal R.L. Cole, of the 3rd Transport Squadron, as mechanics. The Depot flyers are now familiarizing themselves with the operation of this commodious new job before putting it into regular service.

The News Letter Correspondent states that with the acquisition of this new airplane air transportation in that area will be greatly facilitated.

ACTIVITIES OF THE 33RD DIVISION AVIATION

By 1st Lieut. Monro MacCloskey, Adjutant,
33d Div. Aviation, Illinois National Guard

SEPTEMBER proved to be a poor month for the aviators of our Squadron. The weekend holiday over Labor Day was occasioned by good weather, and many of us took advantage of it by going on 500-mile navigation flights. The remaining weekends of the month, however, were accompanied by such bad weather that even the sparrows were walking down Cicero Avenue.

On the 25th and 26th of September we received a visit from the Air Corps Technical Supervisor, Fairfield Air Depot, Major Oakley G. Kelly and his assistant, Staff Sergeant Frank D. Blair. We had hoped to demonstrate to them our proficiency in the art of close order drill, but there was a driving rain on our drill night and the ships had to be kept in the hangar - so our doughboy drill was out.

Four of us had an opportunity to renew acquaintances at the National Guard convention at Providence, Rhode Island. Leaving here on the afternoon of October 7th, we spent the first night in Cleveland, the second night in Albany, and arrived in Providence early on Friday. We carried one mechanic and three ranking officers of the Division. So many of the same pilots from other squadrons attend year after year that it is always a gay reunion.

Our return trip was made most expeditiously. We cleared Providence at 9:05 a.m., Sunday morning, and landed at Buffalo at 1:15 p.m., where we serviced ourselves as well as the ships. We landed again at Detroit for service, and our third stop saw us in Chicago at 8:50 p.m., in spite of a 20-mile head wind most of the way. It was a pleasure to call up the homes of two of our passengers (who had trained out of Providence for fear they would be unable to keep appointments in Chicago on Monday) to leave word of our arrival.

We thought we had done a pretty good job of a cross-country that day in O-38's, but our skipper, Major C.A. McElvain, really showed us up. On that same Sunday, he left Dallas at 3:00 p.m. in an O-31. Three hours and 25 minutes later, he landed at Leavenworth for service. Taking off again at 7:30, he landed in Chicago at 9:50 p.m., having covered over 900 miles in a little less than seven hours, of which one hour was spent on the ground.

All officers of the 33rd Division in Chicago and vicinity were recently ordered to attend a program of demonstrations at the 132nd Infantry armory. I am frank to write that most of us looked forward to a dull evening, but it turned out to be not only instructive, but enjoyable. Stands had been erected on the floor of the armory for the officers, while their guests had balcony seats. An amplifier system was used, which functioned perfectly. The demonstrations were: Use of field glasses in designating targets; 75 mm gun squad drill; point in advance guard; functioning G-3 Section; 75 mm battery supporting Infantry battalion in attack; group instruction methods; troop leading exercise on murals; caliber .22 machine gun firing into sand box. The exhibitions were put on by various units of the Division, and when necessary two exceedingly large murals were referred to. Incidentally, the 8th Infantry (colored regiment) put on the demonstration of "Point in Advance Guard." When the "get-away" man told his duties, he proved he knew the meaning of "get away." Thus, all the officers had an opportunity to refresh their knowledge on points long since forgotten.

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COOPERATIVE MISSIONS WITH HAWAIIAN N. G.

A flight of three Keystone Bombers, under the command of Major Idwal H. Edwards, Air Corps, recently flew from Luke Field to Maui for a stay of two days, during which a series of cooperative missions were carried out in connection with the annual encampment of the 299th Regiment, Hawaii National Guard, at Wailuku. Missions included target towing for machine gun fire and simulated bombardment attacks.

While landing at Maalaea Airport, notorious for tricky wind conditions, Major Edwards was forced off the runway into soft ground, causing his plane to nose over. Sufficient damage was done to necessitate dismantling the plane and returning it to Oahu by means of the steamer "Royal T. Frank." The remainder of the flight returned upon completion of their mission on Maui on September 25th.

In addition to Major Edwards, the following officers participated: 1st Lieuts. Clinch, Egan, Gilger, Armstrong, Summerfelt, and 2nd Lieuts. Altman and Capp.

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The 35th Pursuit Squadron, Langley Field, Va., reports that all pilots qualified as EXPERT AERIAL GUNNERS at the end of the gunnery season, with the exception of one pilot, who has been on detached service for the past eight months.

Training of rear-seat gunners is now in progress, and from the scores made in practice runs it looks as though the "Rear-Seat Drivers" will do more than uphold the Squadron record.

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PERSEVERANCE BRINGS REWARD

By the Bolling Field Correspondent

SIXTEEN years ago, E.R. Janson, now a Sergeant in the Signal Corps and weather forecaster at Bolling Field, D.C., started the pastime of putting notes in bottles and tossing them into the ocean to be carried away by the tides and currents, hoping that some day he would get an answer and be able to learn something about the currents from his experiments. At that time he was enroute from Germany to the United States and sent out two bottles. Since then he has traveled about 19,000 miles over the water and continued his experiments, using bottles, cans, and even a few meteorological balloons, such as are used for obtaining speed and direction of winds aloft for aviators.

While in the vicinity of Newfoundland, Sergeant Janson and his companions sent out several notes. Later, when out on boat excursions from Atlantic City, N.J., he sent out notes at different times, and again while at Miami, Fla., he continued his experiments. While in the service at Panama, he sent out notes from both the Atlantic and the Pacific sides. From Panama he also sent out balloons with notes attached. In his belief, these balloons should have drifted north after reaching the stratosphere, and he hoped to obtain some information on air currents from them.

Upon the completion of his tour of service at Panama, Sergeant Janson left for New York City aboard the CHATEAU THIERRY. About 400 miles from Panama, the transport passed Navasso Island, marked by a lighthouse, but uninhabited because of the lack of fresh water. While passing the island, he dropped three bottles containing the usual notes. Up to that time he had never heard from any of his notes, although in each one he wrote his name and address and guaranteed the return of postage used in writing to him.

After getting back to the United States, Sergeant Janson took up his duties as forecaster at Langley Field, Va., and from there transferred to Bolling Field, where, shortly after his arrival, he was rewarded for his years of effort. To his surprise, he received a letter from Lawrence Faust and Raymond Brown, living near Beaumont, Texas, and stating that they found a bottle on the shore of High Island, not far from Beaumont. According to their report, the bottle had not been there more than half a day and the note was dry and well preserved. The distance the note traveled was about 1500 miles by the northwest route - past Nicaragua and along the coast to Texas - in the elapsed time of 98 days from June 20, 1936, to September 27, 1936.

Sergeant Janson estimates that he has sent out thirty or forty notes, and though he has received only one answer at present, he plans to continue his experiments.

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BUREAU OF AIR COMMERCE TESTS NEW PLANE

The Bolling Field Correspondent states that the Bureau of Air Commerce, Department of Commerce, is testing at Bolling Field a new light plane which, if successful, will revolutionize air travel.

The plane is a small wingless cabin autogiro, manufactured by the Pitcairn Autogiro Company at Willow Grove, Pa. It has seating capacity for two, side by side, and is powered by a seven-cylinder 90 horsepower Pobjoy engine, located in the fuselage behind the pilot and passenger. The engine is geared to the tail wheel for travel on land, and drives the propeller by a long shaft going through the cabin. The front wheels are steered by an apparatus similar to that on an automobile. The autogiro can be flown to any suitable landing place and in a few minutes after landing is ready for travel on land, just as any automobile. The rotor blades fold back over the fuselage and the power is transmitted to the rear wheel instead of the propeller.

On land the speed of the plane is 25 miles per hour, and its flying speed is 90 miles per hour. On a recent test flight, the giro was landed in a small park area in front of the Department of Commerce building and driven through the streets of Washington to Bolling Field.

This plane is another one of the several small types being tested by the Bureau of Air Commerce in its effort to find one which can meet all requirements of safety, economy and ease of operation and still be sold at a very reasonable price for mass production.

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AIR TRANSPORTATION POPULAR WITH THE COMMANDER OF HAWAIIAN DEPARTMENT

Major General Hugh A. Drum, Commanding General of the Hawaiian Department, recently boarded an Amphibian airplane of the 5th Composite Group, piloted by his air aide, Major Phillips Melville, and was flown to Hilo, Hawaii. Although he had now flown to any extent since the World War, General Drum, during the year and a half he has commanded the Hawaiian Department, has made considerable use of an OA-4A for inter-island flights, and to inspect defensive positions of Oahu during Department Maneuvers and at other times. Major Melville's foreign service tour was extended in order that he might be added to General Drum's staff.

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NEW ORGANIZATION IN 2D BOMBARDMENT GROUP

The Headquarters and Headquarters Squadron of the 2nd Bombardment Group, Langley Field, Va., was redesignated on September 1, 1936, with 14 officers and 78 enlisted men. Captain John H. McCormick assumed command of this organization on September 1st, assisted by 1st Lieut. Clifford H. Rees as Squadron Engineering, Operations and Transportation Officer and 2nd Lieut. Russell L. Waldron as Squadron Adjutant.

The organization was accomplished rapidly, and in a very short time this unit was functioning smoothly. The principal functions of the unit have been the clerical work in the 2nd Bombardment Group Headquarters, Transportation and Supply. The Headquarters and Headquarters Squadron has two B-10B airplanes at the present time and expects to receive more planes in the near future. The organization, while young, was fortunate in obtaining well trained personnel, and the results obtained from this unit have been more than satisfactory.

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THE 21ST RECONNAISSANCE SQUADRON

The 21st Reconnaissance Squadron, GHQ Air Force, was reconstituted at Langley Field, Va., on September 1, 1936, with two officers and 19 enlisted men. The organization was moved immediately to their new quarters in the lighter-than-air area.

The principal function of the organization at the present time is the maintenance and operation of the Navigation School of the 2nd Bombardment Group and the two amphibian airplanes assigned for the use of the School.

Although the Squadron, as reconstituted, is very young and in the act of getting started, its work is beginning to take form and is proving satisfactory in a great many respects.

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RADIO TELEPHONY ON THE ISTHMUS

A day or so ago, writes the Albrook Field Correspondent, Colonel Frederic H. Smith, General Staff Corps, was seated at his desk in Department Headquarters at Quarry Heights. The telephone rang. He answered it and held a conversation with General Brett. That all sounds normal enough - but General Brett was in a P-12 airplane, 6,000 feet above Colonel Smith!

Lieut. D.F. Henry, Wing Communications Officer, is responsible for this radio sleight-of-hand. Through a complex arrangement of practically everything under the sun - he calls it "Goldie," with apologies to Rube Goldberg - he has made it possible for any airplane to hold a two-way conversation with any telephone on the Isthmus.

Take notice, married cross-country pilots - now you can 'phone the wife to come and get you instead of buzzing forty sets of quarters!

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ACTIVITIES AT LONG BEACH, CALIF.

Considering our limited equipment, says the scribe for the 479th Pursuit Squadron, Air Reserve, Army Air Base, Long Beach, Calif., the current training year has gotten off to a good start, averaging about 450 flying hours per month. Sundays are the big days, with about 20 officers on the flying line, keeping our seven old and very faithful PT's in the air from early morn until late afternoon. Operations consist principally of tactical problems applicable to the equipment and locale.

The Regular Army made a pretty big scoop in our Reserve ranks the first of October by handing out Regular commissions to four of our Reserve officers - Leslie Raybold, Don O. Darrow, Wm. M. Brown and Radcliffe C. Clausen - and calling Maurice E. Glaser to three years' active duty. Glaser is a double loss, as he was our one and only enlisted pilot, and the Post personnel waved him goodbye regretfully.

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ASCERTAINING PATTERNS MADE FROM BOMBS

The 9th Bombardment Squadron, Hamilton Field, San Rafael, Calif., has been engaged in an experiment, directed by the Commanding General, 1st Wing, GHQ Air Force, to ascertain the patterns resulting from bombs dropped from various types of formation. Additional airplanes and whole flights have been attached from the 11th and 31st Bombardment Squadrons when necessary to make up a 9-airplane formation. The outlines of a target were laid out on the southeastern section of Mather Field, Calif., the bombs were dropped without powder charges and the distances from the outlined target to the places where they fell were measured with a tape after each mission. The following factors were varied and used in various combinations and the resultant pattern checked:

1. Distance in formation.
2. Interval in formation.
3. Stepped-up and stepped-down formation with several differences in altitude.
4. Altitude.
5. Speed.
6. Wind direction.

An attempt was made to keep the releases in formation as nearly simultaneous as possible. Two lights were installed on the bomb bay doors of the leading airplane, one signaling time of sighting operation, and the other signaling the time of bomb release.

AIR TACTICS DEMONSTRATION TO KIWANIANS

A crowd of Kiwanians from the California-Nevada District, estimated at about two thousand, thronged the taxying mat at March Field, Riverside, Calif., on October 8th as the guests of Colonel John H. Pirie, the base force commander.

The visiting business men were thrilled by the many demonstrations of national defense which their fellow Kiwanian, Colonel John H. Pirie, Air Corps, had arranged for them. Colonel Pirie is a charter member of the Arlington, Virginia, Kiwanis Club.

Particularly breath taking and a novelty to many of the base force members was the dropping of parachute bombs on a field two miles away. This was only a preparation for the raining of lighter parachute bombs on the landing mat only a few hundred feet from the spectators. The demonstration gave Southern Californians one of their first practical lessons in attack plane bombing or ground strafing.

Other air maneuvers, such as flying in various formations, greatly interested the spectators as the dust from the parachute bombs still hung over the ground.

A feature which greatly pleased officials of the Kiwanis organization was the ground salute given by the nine Attack planes. They reversed the mediaeval fashion by performing their air maneuvers first and then taxying in front of the reviewing balcony in air base headquarters. In the manner of knights of old, they then taxied sharply to the left and returned to their hangars.

Among the distinguished visitors were Messrs. A. Copeland Callen, of Urbana, Ill., International President of Kiwanis; Charles R. Crooke, Mountain View, Calif., the District Governor; and Ernest G. Button, President of the Riverside Chamber of Commerce.

Battery "A" of the 63rd Coast Artillery, together with detachments from other batteries, were present to give demonstrations of searchlights and artillery gun operation.

Talks were given on Coast Artillery work by Captain Arnold D. Amoroso and Harry A. Aldrich, of the 63rd Coast Artillery, the former touching on the searchlights and allied equipment and the latter covering other phases.

Shops and hangars were open during the day for Kiwanians and other civilians desiring to visit them. Demonstrations were given of parachute packing.

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During September, the Engineering Department of the San Antonio Air Depot, Duncan Field, Texas, overhauled a total of 85 engines and 20 airplanes, and repaired 17 airplanes and 27 engines.

"CHANGES FOR THE BETTER IN MISSOURI"

The 35th Division Aviation, Missouri National Guard, recently made several improvements in the recreational facilities for the enlisted personnel. The enlisted men's clubhouse has been moved to a location nearer to the hangar and several improvements have been made.

The large clubhouse has been painted, newly roofed, and papered. Adequate toilet facilities have been installed and improvements affected on the rathskellar. The floors have been refinished and all needed repairs have been made on the furniture in the club. Steam heat has been installed and the enlisted men are very enthusiastic in their anticipation of entertainments during the coming winter months.

The grounds about the clubhouse are now in the process of being landscaped. A project is in the making whereby the enlisted men will have a concrete tennis court, a volley ball court and a baseball diamond, in order to further the athletic activities of the enlisted personnel.

In the near future this organization hopes to be in a position whereby the enlisted personnel of other Air Corps organizations will be extended invitations to visit and participate in the recreational facilities now being completed.

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ACTIVITIES OF 77TH PURSUIT SQUADRON

With the exception of two night formation flights, the last days of September were devoted by the 77th Pursuit Squadron, Barksdale Field, La., to squadron gunnery missions at New Orleans, La.

Everyone was concerned with the boresighting of his ship, planning how to get by on the finances left at the end of the month, packing and performing his regular squadron duties.

While at the Shushan Airport at New Orleans, full time was devoted to the problem of working up a good squadron average score, everyone exchanging advice, profiting from the mistakes and working from 5:45 a.m. until about 4:00 p.m. This concentration of effort resulted in rewards in the form of good scores, and flying time. All the beginners learned how to handle the gun and airplane while trying to hit a moving target.

Says the News Letter Correspondent: "New Orleans greeted us with mosquitoes capable of drilling holes in the toughest hides and let us have thunder showers by the dozens. But we all enjoyed the work, the struggle to get meals, trips to town and famous spots, and the fellowship of the gang when finally off duty.

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IMPRESSIONS OF BRITISH PILOT DURING RECORD-BREAKING ALTITUDE FLIGHT

IN a statement he gave to the press, following his flight on September 28th, during the course of which he reached an unofficial altitude mark of 15,230 meters (49,967 feet), Squadron Leader F.R.D. Swain, of the British Royal Air Force, stated that at first he climbed in wide circles until he reached 40,000 feet, when he turned South-East and continued to climb for another 5,000 feet. At low levels there was a cold and fairly strong north-westerly wind. This grew into hurricane force in the upper air. Into this he turned and made a straight climb into wind to avoid the danger of being blown out to sea.

At 46,000 feet, Squadron Leader Swain stated he found the light was almost dazzling. Warned of this through his experience on previous flights, he had had the upper surfaces of the wings and fuselage of his plane painted black to reduce the glare. The sky above him was a very deep blue, although not dark enough for the stars to be visible. The change in the color of the sky is due to the fact that there is no dust or moisture in the air to split the rays of light and no clouds above 35,000 feet.

The air was so clear that when ten miles north of Brighton he could see the English coast line from Margate to Land's End, and northwards to the Wash. London appeared like a tiny toy town, and the Thames and other rivers like narrow silver ribbons. The Channel Islands between England and the coast of France looked like stones in a river bed. He admitted that at that height he felt small and lonely. England seemed a very minute country, and he felt he could easily be blown beyond its borders.

It was necessary for him to concentrate on his instruments so as to get the correct speed for attaining the maximum height, as the controls at extreme heights were not sensitive, and height might be lost by neglect of the instruments. He kept constant watch on the air speed indicator, the oxygen pressure gauge, the suit pressure gauge, the compass, clock, altimeter and fuel gauge. At this time the pressure suit was causing him a little discomfort. Some difficulty was experienced in moving his limbs and he felt a slight cramp in his right arm, but he had no difficulty in breathing. He remarked that without the special suit worn on this flight he could not have remained conscious at above 40,000 feet or so.

Before starting he had been warned that his altimeter was over-registering to the extent of about 1,000 feet. Consequently, at 50,000 feet he was afraid he had not beaten the record, so he continued to climb until the altimeter showed 51,000 feet. Here he found he could climb no higher, so he decided to call it a day. With only enough fuel left for about 45 minutes of flying, he throttled back and began to glide. He was then almost over the Bristol Channel and could see the Welsh mountains. When he glided down about 5,000 feet, the celastoid window of his helmet hazed over, as did the windows of the cockpit. He could not see any of his instruments and admitted that this worried him considerably. He could not read his compass, but he could just distinguish the glare of the sun to the east and so, knowing he was over the West of England, flew towards the light, constantly losing altitude. This he did in an erratic manner, for he was locked up in his diving suit, and to all intents and purposes blind.

Then he began to feel that he was being suffocated. Becoming gradually weaker, he came to the conclusion that he was running short of oxygen, and he tried to press the relief lever to open the cockpit cover but could not make it function. Actually, it was found afterwards that this lever was working quite properly, but at that time Squadron Leader Swain was so exhausted that he was unable to operate it.

Then he tried to get to the ripping panel on his suit so that he could get his head out, but encumbered as he was with the suit, his parachute harness, etc., he could not find the fastener. In desperation he grabbed the knife which had been hung within his reach in the cockpit specifically for such an emergency and hacked out the window of the helmet.

The fresh air blowing in through the gap in the window made him feel much better. He was now at 14,000 feet somewhere over Yeovil, so he steered east and continued to lose altitude until he reached Salisbury. When he landed at Netheravon he had only two gallons of fuel left.

The British aviation journal FLIGHT states that, although Swain had the impression that the oxygen supply was failing, it did not really do so. The feeling which he experienced was due to his exhaustion. To fly in his special suit at 50,000 feet was the equivalent of flying with an ordinary oxygen mask and electrically heated clothing at 35,000 feet. Any pilot who flew with the ordinary equipment at 35,000 feet for two hours would naturally be exhausted at the end of it. Swain had been up much longer than had been anticipated (his flight took altogether 3 hours and 20 minutes) and it had taken him an hour to climb the last thousand feet.

Swain explained the frosting of the windows by saying that as he came down from dry atmosphere above 35,000 feet into the area of moisture his engine was throttled down, and consequently he got less warmth in his cockpit from the arrangement by which hot air was introduced from the oil coolers.

He said that he was very disappointed with the flight, because he had hoped to get higher, but it should be remembered that this was the first attempt on this type of airplane.

The minimum atmospheric pressure measured during the flight was 92.0 millimetres of mercury, and the lowest temperature was -49.8 deg. centigrade. Both of these measurements were at the highest point attained.

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THE DIVING SUIT IN THE HIGH ALTITUDE FLIGHT

Touching on the diving suit worn by Squadron Leader Swain during his altitude flight, above described, the British aeronautical publication The Aeroplane states that, because the pressure of the atmosphere at 50,000 feet is but one-ninth of what it is at sea-level, the pilot had to be put either into an air-tight cabin or an air-tight suit.

Group Captain G. Struan Marshall, of the Central Medical Establishment, Royal Air Force, who was in charge of the medical research in connection with the flight, has set out the reasons which make such enclosure necessary. He explains that human beings are physiologically adapted to breathe air, of which one-fifth is oxygen, at a pressure of 15 lbs. per sq. in., but they can continue to live, if they do no appreciable amount of physical work, should the atmospheric pressure fall to a little more than half of this, as it does at 18,000 feet.

Above this height, as there is not enough oxygen in the air, the deficiency can either be overcome by increasing the amount of oxygen in the air breathed by the pilot, or by increasing the pressure within his lungs - in fact, by supercharging them. The former method is the easier, and is in normal use, but even when carried to the limit, which would be to supply the pilot with absolutely pure oxygen, the method is theoretically inadequate for heights much above 43,000 feet, though previous records above this height have been achieved by making use of this method.

Above 43,000 feet, therefore, some means has to be found to increase the pressure in the lungs, either with or without extra oxygen. For physiological reasons this cannot be done to any useful extent without balancing the pressure within the lungs with that outside them, so that the immediate atmosphere around the pilot has to be kept at a pressure not less than that of the atmosphere at 43,000 feet, as was stated on the authority of Mr. Cyril Uwins after his height record in 1932.

This can be done by enclosing the pilot either in an air-tight cabin or in an air-tight suit. The former is rather better from the point of view of the physiologist, but the latter is preferred by the aircraft designer,- hence the diving suit of Squadron Leader Swain.

This was produced by Siebe, Gorman and Co., Ltd., as a result of the work that the late Professor G.S. Haldane, F.R.S., and Sir Robert Davis did in conjunction with the Air Ministry. The pressure inside this suit can be automatically maintained at a predetermined value.

As the onset of oxygen starvation is dangerously insidious and indeed is usually denied by the sufferer, the pressure inside the suit has to be as high as possible compatible with the pilot's adequate freedom of movement. Obviously if the pressure inside the suit is too great the pilot finds movement and control of his limbs unbearably difficult.

On the record attempt the pressure inside the suit was equivalent to that of the atmosphere somewhere between 32,000 feet and 35,000 feet. Protected by such a suit, Squadron Leader Swain had been taken in the low-pressure chamber at Farnborough to a "height" of 80,000 feet without undue discomfort, and has been subjected to temperatures of -60° Centigrade.

The suit is made in two pieces of rubberized fabric, of which the top part carries a helmet with a large curved window of celluloid-like material. The suit is made air-tight round the waist with a pipe-clip type of joint. The breathing circuit is of the closed type, and into it oxygen is fed. The oxygen jet is the driving element of a small injector which produces rapid circulation of gas around the system.

From the injector the gas passes through a flexible tube into the helmet on the right side of the face and circulates round the latter to an outlet on the left. The gas, which now contains the exhaled breath, passes down a flexible tube to a canister in which are chemicals to absorb the carbon dioxide and moisture from the exhaled breath. It is then recirculated.

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GRADUATION OF STUDENTS FROM RANDOLPH FIELD

When the March, 1936, class started training at the Air Corps Primary Flying School at Randolph Field, Texas, it was, in point of size, the smallest class entering this school for quite a number of years. The class consisted of 5 officers of the Regular Army, 7 Air Corps enlisted men, 3 enlisted men from other branches of the service, and 49 candidates from civil life, total 64. The civilian and enlisted students pursued the course under the status of Flying Cadet.

When graduation day rolled around, 35, or 55% of these flying students (3 officers and 32 Flying Cadets) were successful in completing the eight months' intensive course of primary and basic training at Randolph Field, and on October 9, 1936, were transferred to the Advanced Flying School, Kelly Field, Texas, for the last four months of the year's training. These graduates specialized in the various branches of combat aviation, as follows:

OBSERVATION

Capt. James R. Anderson, Ord.Dept.	Wis.
2d Lt. John K.Brown,Jr.,F.A.	Minn.
2d Lt. Jack W. Hickman, C.E.	McCook, Neb.
Henley V. Bastin, Jr.	
Sterling G. Harvey	Bloomsburg, Pa.
Aaron R. Hoffeditz	Greencastle, Pa.

ATTACK

Clyde Box	Denton, Texas
James R. DuBose, Jr.	Aiken, S.C.
William E. Eubank, Jr.	Bluefield, W. Va.
Elbert Helton	Clifton, Texas
Wallace E. Nau	Pasadena, Calif.

PURSUIT

Jacob J. Brogger	Butterfield, Minn.
Walter H. Dillingham	Honolulu, Hawaii
Joseph F. Hunker	San Diego, Calif.
Steele R. Patterson	Seneca, S.C.
Henry G. Thorne	Fort McPherson, Ga.
Hubert Zemke	Missoula, Mont.

BOMBARDMENT

Julian M. Bleyer	Tulsa, Okla.
Philip G. Cochran	Erie, Pa.
Lloyd H. Dalton, Jr.	Ottawa, Kans.
Dwight E. Herrold	Long Beach, Calif.
Edward G. Hillery	Boonton, N.J.
Donald W. Macdonald	San Francisco, Calif.
Thomas E. Margrave	Gordon, Neb.

BOMBARDMENT (Continued)

William K. McNown	Lawrence, Kans.
Thornton K. Myers	Lafayette, Ind.
Norris Perry	Sedro-Woolley, Wash.
James W. Phelps	Berwyn, Pa.
Jack L. Schoch	New Ulm, Minn.
Eugene H. Snavely	Harlingen, Texas
David A. Tate	Asheville, N.C.
Robert A. Theobald	Portland, Ore.
Sam P. Triffy	Detroit, Mich.
Harold E. Watson	West Hartford, Conn.
Earl B. Young	Sidney, Neb.

All of the three officers graduating from the Primary Flying School are West Pointers, Capt. Anderson being a member of the 1926 Class, and Lieuts. Brown and Hickman of the 1935 Class.

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TRAINING ACTIVITIES IN PANAMA

Action: Under the direction of Brigadier General George H. Brett, new 19th Wing Commander, the Air Force of the Panama Canal Department is now well started on its new program of training. Cooperating with the Coast Artillery, the Wing is now engaged in a problem which will extend over a period of a year and a half. This problem, of course, concerns the defense of the Canal, but the Air Corps is used alternately as attacking and defending force. One day a week, sometimes two, Bombardment, Observation and Pursuit take off with blood in their eyes and gas in the belly tanks, ready for practically anything.

Each week brings a different phase of the main problem. One week the Air Force may be Reds - the Attack (Pursuit doubling in Attack) theoretically neutralizing the fire of the various anti-aircraft installations, while the Bombers aim for their various objectives. Again, the Pursuit and Observation may be Blues trying to prevent Red Bombers, simulating carrier-based enemy, from reaching the Canal. The Bombers are forced to guess their release lines, which is highly unsatisfactory where split second timing is of such vital importance. Because of the fact that the Keystone Bombers are for the time being out of commission and that the B-10's are all assigned as long distance reconnaissance, there is some scurrying when a Bomber is wanted.

Influenced by the requirements of these Wing problems, squadron training recently has stressed the various types of Pursuit attack on Bombers.

Discussion of 'string' versus 'vee' has certainly raised the conversational noise level. But, no matter what the formation, a P-12, even an 'F,' just leers and says 'No!' when you urge it to catch a B-10. However, where there is a will, there's a way, and Major George H. Beverley, in charge of training, has a will. Recently, with two string formations of Pursuit vainly endeavoring to get excess speed over two B-10's acting as 'meat,' so that they could make an attack from above, they finally accomplished this seemingly impossible task. The approved solution consisted of Major Beverley flying along at 1700 RPM in a P-12, with a chastened Martin on each wing! After that the Pursuiters forgot that they were flying antique chariots, and the attacks proceeded without difficulty.

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AIR CORPS MANEUVERS AT BAKERSFIELD, CALIF.

Bakersfield, Calif., is the scene this month and until November 18th of one of the greatest series of Army Air Corps maneuvers held in any West Coast municipality in recent years. The 19th Bombardment Group and the squadrons of the 17th Attack Group are holding field exercises at the Bakersfield airport.

A constant stream of olive drab-clad soldiers will filter into the airport at various times between October 19th and November 18th, it is stated. The latest types of Bombardment and Attack airplanes will be used in these problems, giving the citizens of Bakersfield a good opportunity to learn about the planes used by the Army's General Headquarters Air Force.

Brigadier General Delos C. Emmons, Commander of the First Wing of the GHQ Air Force, who made the announcement concerning the maneuvers, stated that the main object of camping at the airport would be to give the officers and enlisted men opportunities for training in the operation of a military airdrome in the field.

Five hundred enlisted men and over 100 officers will pass through the airport at different periods. There will never be more than 350 enlisted men and 50 officers encamped at Bakersfield at one time, it was stated.

The 34th Attack Squadron, numbering 8 officers and 77 enlisted men, was the first unit to take the field, leaving March Field for Bakersfield by truck and airplane on the morning of October 21st, at 10:00 o'clock. It was commanded by 1st Lieut. Nathan Bedford Forrest, great grandson of the famous Confederate raider. The air caravan numbered 7 Northrop Attack planes and 2 old type Boeing P-12 Pursuit planes. This will probably be the last occasion the P-12's will be used in the San Joaquin valley. They were scheduled to remain in Bakersfield until October 28th.

Leaving Bakersfield on the morning of the 28th, they probably passed enroute the Golden Bears of the 73rd Attack Squadron, commanded by Major L.C. Mallory, and numbering approximately the same number of officers and enlisted men. The 73rd was the next organization scheduled to take over the Air Corps exercises at Bakersfield. Major Mallory led the recent nonstop flight to San Antonio with five Northrop Attack planes. The 73rd will remain at Bakersfield until November 4th.

The next unit of the 17th Attack Group to take over Army training at the Bakersfield airport will be the famous 95th Attack Squadron, known throughout the Army for its record in France, where it participated in 240 air combats. The 95th is commanded by 1st Lieut. Ernest H. Lawson. Its squadron exercises will continue until Armistice Day, November 11th, when the remainder of the 17th will arrive by plane and truck from the home air base at March Field. The three units to reinforce the 95th will be the 34th and 73rd Attack Squadrons and the 17th Attack Group Headquarters Squadron. The 17th Attack Group, commanded by Lieut. Colonel Carlyle H. Wash, will consist of about 50 officers, over 200 enlisted men and 24 of the newest Northrop Attack planes. The work of the 17th at Bakersfield will consist mainly of dispatching Attack planes daily to the Muroc Bombing and Gunnery Range, Muroc, Calif., for bombing and gunnery.

As the 17th has only been equipped with the Northrop Attack planes since July, this range practice will be the first exercises with them. Glide bombing, which consists of coming down in a steep glide preparatory to attacking the target, will be one of the features of squadron and group training. Bombing will be restricted to an altitude of one thousand feet or more, it is stated.

All of the units will return to March Field on November 18th.

Captain Philip Schwartz, First Wing Ordnance Officer, states that six carloads of bombs, totalling 2500 of the 50-pounders, will be used in the exercises.

As previously announced at March Field, eight Bombers of the 32nd Bombardment Squadron, commanded by Major Walter R. Peck, A.C., held maneuvers at Long Beach from October 19th to 24th. Bombing of aluminum powder spots on the water was the principal activity and was participated in by enlisted men only, as commissioned bombardiers qualified at other times. Previous to the bombing, aluminum powder flasks are dropped on the Pacific Ocean just off Long Beach. Bombs loaded with water and sand are employed, as the splash tells whether a hit has been scored or not.

Group maneuvers of the 19th Bombardment Group will take place at Bakersfield between November 2nd and 7th, when 40 officers and 250 enlisted men will be encamped at the Municipal Airport. The camp will be in charge of the Group Commander, Lieut. Colonel Hubert R. Harmon. The organizations in the 19th Bombardment Group are the 30th and 32nd Bombardment Squadrons, the 19th Bombardment Group Headquarters Squadron, the 38th Reconnaissance Squadron and the 23rd Photographic Section.

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RETIREMENT OF NONCOMMISSIONED OFFICERS

Effective October 31, 1936, Technical Sergeant Edward J. Hudson, Base Headquarters and 1st Air Base Squadron, Air Corps, Langley Field, Va., and First Sergeant Fred J. Shafer, 73rd Attack Squadron, March Field, Calif., were placed on the retired list. Technical Sergeant Hudson was advanced on the retired list to the rank of first lieutenant, under the provisions of the Act of Congress, approved May 7, 1932.

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Fourteen second lieutenants of the Air Corps Reserve were, in accordance with Special Orders of the War Department, recently issued, ordered to duty in the Hawaiian Department, viz: Martin Ansel Bateman and William Hogan Clark from Brooks Field, Texas; Earl Eugene Bates, Jr., Jack Wilson Berry, Jack S. Marks and Richard P. Schumacher from Selfridge Field, Mich.; Graeme Stewart Bond, Howard Collins Denison and Benjamin Grey Holloway from Scott Field, Ill.; Emil Silvan Scott and Joseph Abbott Thomas from Langley Field, Va.; Abraham Donley Olson and Paul Waterman from Mitchel Field, N.Y., and Gilmore Vincent Minnis from Barksdale Field, La.

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NINETEENTH ANNIVERSARY OF 19TH AIRSHIP SQUADRON

The 19th Airship Squadron, Moffett Field, Calif., celebrated its nineteenth anniversary on September 25th. On this occasion, the Squadron was host to the entire garrison at a picnic held at Searsville Lake, a distance of 18 miles from the field. Various forms of entertainment made the day pass quickly. The field events for children, varying in ages from 3 to 15, added much amusement for the elders. The site for the picnic was well selected, as it features the best boating and swimming in this region.

It seems appropriate to review a few highlights of the 19th Airship Squadron.

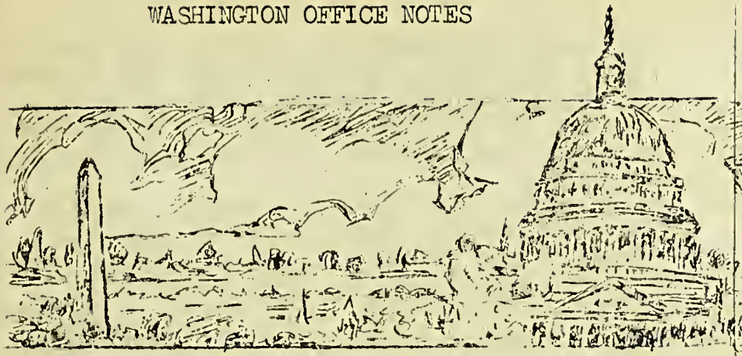
Originally organized as the 19th Balloon Company at Fort Omaha, Neb., the organization sailed for France on October 21, 1918. After a short assignment at the United States Balloon School at Souye, France, the Squadron returned after the Armistice to the United States, arriving on April 4, 1919. It was demobilized at Mitchel Field on the 29th of that month, and in July of that year reorganized at Langley Field, Va., as the 19th Airship Company. There the Squadron remained until November, 1935, when the War Department decided that sunny California afforded a better climate for the failing health of many of the old timers, and the Squadron was transferred to Moffett Field.

The 19th, being the oldest airship operating unit in the United States Army, has many noteworthy flights and records to its credit. These flights involved the first landing on the roof of a building in a large city for delivery of U.S. mail; the landing of an airship on a steamer at sea, namely, the "American Trader," in 1928; the landing on the plaza of our Capitol in Washington, D.C.; the continuous non-stop flight of 1855 miles; several flights of long duration without refueling, the longest of which extended to 77 hours.

The Squadron has been instrumental in completing many engineering tests in cooperation with the Air Corps Materiel Division in the development of Lighter-than-Air craft and allied equipment. Although the Squadron has not been cited, the first two Cheney Awards went to members of the Squadron. Master Sergeant H.H. Chapman won the first award by his heroism in rescuing members of the ROMA crew when she was destroyed by fire at Norfolk, Va., in 1922. The next Award went to Lieut. Uzal G. Ent for heroism shown in the National Balloon Race in 1928, when he remained in his burning balloon in an attempt to save the life of his pilot, Lieut. Paul Evert, who, unknown to Lieut. Ent, had already been killed by a lightning bolt.

The entire Squadron looks back over its past with pride on its achievements and with the conviction that whenever called upon the organization will not be found wanting.

WASHINGTON OFFICE NOTES



Major General O. Westover, Chief of the Air Corps, and Brigadier General A.W. Robins, Chief of the Materiel Division, flew to Scott Field, Ill., on October 23rd, for a conference. General Westover flew his A-17, while General Robins flew in an A-17 piloted by Lieut. Colonel Oliver P. Echols.

During his recent trip in the east, General Arnold visited the following aircraft factories: Wright Aeronautical Corporation, Paterson, N.J.; Seversky Aircraft Corporation, Farmingdale, L.I., N.Y.; Sikorsky Aircraft, Bridgeport, Conn.; Pratt & Whitney Aircraft, Hartford, Conn.; Bell Aircraft Corporation and Curtiss Aeroplane and Motor Co., Buffalo, New York, and the Fairchild Aircraft Corporation, Hagerstown, Md. General Arnold was also in attendance at the Mitchel Trophy Race at Selfridge Field, Mich.

On October 24th, Colonel Rush B. Lincoln and Lieut. Colonel Rosenham Beam returned from an inspection trip to Maxwell Field, Ala., and to the Valparaiso, Fla., Bombing Range. While on this trip they also inspected Reserve activities at Dallas, Texas, and in Oklahoma, and mobilization plans at Barksdale, Randolph, Brooks, Kelly and Chanute Fields.

Lieut. Colonel Ross G. Hoyt, accompanied by Captain D.F. Stace, departed October 24th to accomplish a ferrying trip from California to Mitchel Field, N.Y.

Major M.H. McKinnon returned October 24th from a ferrying trip to Farmingdale, N.Y.

Visitors to the Chief's Office during the course of navigation flights were: Colonel Frank M. Kennedy, Commanding Officer of Scott Field, Ill.; Lieut. Leon R. Brownfield from Scott Field, Ill.; Major Otto G. Trunk from Langley Field, Va.; Major Edward M. Morris from Barksdale Field, La.; and Major John V. Hart from Kelly Field, Texas.

Officers on duty at the Materiel Division, Wright Field, Ohio, who recently visited the Chief's Office for conference on various matters, were Colonel Frederick L. Martin and 1st Lieut. C.L. Munroe. Major Carl F. Greene and Captain R.H. Kemmer, of the Materiel Division, were in Washington on October 28th, for the purpose of conference with the National Advisory Committee for Aeronautics.

Majors Robert Kauch and Rowland C.W. Blessley left on ferrying missions, the former to Atlanta, Ga., and the latter to California.

Col. Herbert A. Dargue, of the Air Corps Tactical School, Maxwell Field, Ala., was recently on temporary duty in the Chief's Office.

Lieut. Colonel Robert L. Walsh returned October 17th to his duties in the Reserve Division, following an inspection trip.

Lieut. Colonel Gerald E. Brower and Major William B. Souza returned from temporary duty at Wright Field, Ohio, and Major Alfred W. Marriner from Langley Field, Va.

Major Charles Y. Banfill returned October 18th from a navigation flight to Selfridge Field. Incidentally, he was in attendance at the Mitchel Trophy Race.

First Lieut. Marvin L. Harding, of Hamilton Field, Calif., was a visitor while enroute to Langley Field.

First Lieut. Kenneth R. Crosher, of Barksdale Field, La., arrived October 23rd for a conference.

Major Edward V. Harbeck, Jr., of the Inspection Division, left October 27th on an inspection trip to Barksdale Field and the Air Corps Training Center.

Major Oakley G. Kelly, Technical Supervisor, Inspection Division, accompanied by his technical assistant, Staff Sergeant Frank D.Blair, will sail on November 11th for the Panama Canal Department to make an inspection of Air Corps activities.

Major Henry H. Reily, Technical Supervisor, Inspection Division, accompanied by his technical assistant, left on an inspection trip to the Air Corps Tactical School, Maxwell Field.

Captain James W. Spry left by air on October 27th on an inspection trip connected with National Guard and Reserve matters.

Major Malcolm C. Grow, Medical Corps, Flight Surgeon, returned October 21st to his duties in the Chief's Office from a navigation flight to Wright Field.

Major Karl S. Axtater and Captain Evers Abbey, of the Buildings and Grounds Section, Supply Division, returned October 25th from a brief leave of absence.

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Contributions of Material for the Air Corps News Letter are earnestly solicited from Randolph, Mitchel, Brooks, Maxwell and Chanute Fields.

BIOGRAPHIES

LIEUT. COLONEL P.E. VAN NOSTRAND

Lieut. Colonel Percy E. Van Nostrand, Air Corps, now serving a tour of duty in Washington as a member of the War Department General Staff, was born on August 6, 1887, at Washington, Iowa. He graduated in 1912 from the State University of Iowa, receiving an A.B. degree.

After serving as a commissioned officer in the Iowa National Guard Infantry from August, 1909, to February, 1913, he accepted, on March 3, 1913, a commission as second lieutenant in the Infantry, Regular Army. He was promoted to 1st Lieutenant on July 1, 1916; to Captain, May 15, 1917, and to Major, Signal Corps, October 23, 1917.

During the World War, Col. Van Nostrand was one of the early settlers at Kelly Field, Texas, and he was Adjutant of that post until May 14, 1918, when he was transferred for duty as a student at the Army Balloon School at Fort Omaha, Neb. Upon the completion of the lighter-than-air course at that school he was, on August 15, 1918, rated as a Balloon Observer. He remained at Fort Omaha, serving as Executive Officer, until December 26, 1918, when he reported for duty as Executive Officer, Balloon and Airship Division, Office of the Director of Air Service, Washington, D.C. During his tour of duty in Washington, he served at various times as Acting Chief of the Balloon and Airship Division and was a member of several boards and committees, among them the Aeronautical Board and the Helium Board.

For several months during the latter part of 1921, Col. Van Nostrand was on temporary duty in England in connection with the inspection of the airship R-38. He was also on temporary duty in France and Germany in connection with airship activities. Shortly following his return to Washington, in October, 1921, he was temporarily assigned to duty at Langley Field, Va., as a student at the Airship School and, upon the completion of the course of instruction, he was, on January 21, 1922, assigned as Acting Assistant Chief of the Lighter-than-Air branch of the Training and War Plans Division and Chief of the Schools Section, Office of the Chief of Air Service.

In November, 1922, Col. Van Nostrand was assigned to duty as Army observer in connection with the airship ZR-1 at the Naval Aircraft Factory at Philadelphia, Pa. In March, 1923, he was assigned to duty at the Naval Aircraft Station at Lakehurst, N.J., to take a rigid airship training course.

From March to July, 1924, he was on temporary duty at Brooks Field, Texas, and he was then transferred to the Advanced Flying School at Kelly Field, Texas, where he completed the course in advanced observation. During the two years following, he completed the course at the Air Corps Tactical School at Langley Field, Va., and the Command and General Staff School at Fort Leavenworth, Kansas.

He began his tour of foreign service in the Hawaiian Department in August, 1926, being on duty as Commanding Officer of Luke Field and the 5th Composite Group until August, 1929, when he returned to Langley Field for duty as Instructor at the Tactical School. In May, 1931, when the Tactical School was moved to Maxwell Field, Ala., he was in command of that post to August 11th of that year, and served temporarily as Acting Commandant of the Tactical School. Thereafter, until July, 1932, he was Executive Officer at Maxwell Field.

Upon his graduation from the Army War College in June, 1933, Col. Van Nostrand was on duty for a year as Assistant Commandant of the Air Corps Technical School at Chanute Field, Rantoul, Ill. He then returned to Washington to pursue the one-year course of instruction at the Army Industrial College and, following his graduation therefrom in June, 1935, he was detailed as a member of the War Department General Staff.

Col. Van Nostrand was commissioned in the Air Service as a Major, October 16, 1920, and was promoted to his present rank on August 1, 1935. He holds the aeronautical ratings of Balloon Observer, Airship Pilot and Airplane Observer.

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LIEUT. COLONEL ROBERT GOOLRICK

Lieut. Colonel Robert Goolrick, now on duty at Barksdale Field, Shreveport, La., was born in Virginia, June 9, 1886. He graduated from the Virginia Polytechnic Institute with the degree of B.S. in Electrical Engineering in 1907. Commissioned a second lieutenant in the Regular Army, October 5, 1908, he served in the Coast Artillery until July, 1920, when he transferred to the Air Service. He was promoted to 1st Lieutenant, December 2, 1910; to Captain, July 1, 1916; to Major (temporary) March 7, 1918; to Major, July 1, 1920, and to Lieut. Colonel, May 24, 1933.

During the World War, Col. Goolrick served in France from October, 1917, to January, 1919, commanding the 1st Anti-Aircraft Artillery. During this period he was detailed with the British Army for five months near Ypres, and later with the French 7th Army in Alsace. He was in three major offensive battles with the American Army. He was awarded the Croix de Guerre by the French GHQ.

Upon his return to the United States, Col. Goolrick was assigned to duty at Fort Hunt, Va., in the coast defenses of

Washington.

Assigned, in July, 1920, to the Air Service Primary Flying School at Carlstrom Field, Arcadia, Fla., for flying training, Col. Goolrick completed the course in March, 1921, and was then assigned as a student at the Air Service Observation School at Post Field, Fort Sill, Okla. Upon the completion of the advanced flying course, he was rated as "Airplane Pilot," effective October 14, 1921. In January, 1922 he assumed command of Air Service troops at Pope Field, Fort Bragg, N.C.

In August, 1923, Col. Goolrick reported for duty at Wheeler Field, Schofield Barracks, Hawaii, and was assigned to the command of the 17th Composite Group. On January 15, 1924, he assumed command of the 4th Observation Squadron. On October 25, 1924, he was detailed as Department Air Officer. Upon the completion of his tour of duty in Hawaii, he was transferred to Langley Field, Va., where, in October, 1926, he began the course of instruction at the Air Corps Tactical School. His graduation in June, 1927, was followed by another year of duty as a student at the Command and General Staff School at Fort Leavenworth, Kansas.

Assigned as Commanding Officer, 2nd Cavalry Division Aviation, Marshall Field, Fort Riley, Kansas, July 13, 1928, Col. Goolrick remained on this duty until July 5, 1931. In May, 1929, he was given the additional assignment of instructor at the Cavalry School at Fort Riley.

Transferred to Wright Field, Dayton, Ohio, he commanded that field and was Chief of the Administration Section, Materiel Division, until August 19, 1933, and Acting Executive and Executive until June 15, 1935, when he was transferred to duty at Barksdale Field, La.

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50TH SQDN. LEARNS ABOUT OPERATION OF B-12

The 50th Observation Squadron, which is now equipped with B-12A "Reconnaissance" airplanes, recently left Oahu for Morse Field, South Cape, Hawaii, to go into the field for two days for the purpose of determining problems involved in the maintenance and operation of their new planes on the outlying islands. A navigation problem was carried out on the flight to Hawaii, which was completed without incident. Upon arrival, a camp was established in the grounds of the lighthouse, South Cape, and arrangements completed for a stay of several days. It immediately developed, however, that the existing fuel storage could not be used satisfactorily, as it necessitated taxying the airplanes for a considerable distance over soft and uneven ground, with a consequent danger of overheating the engines. Operations were accordingly curtailed and, after spending the night in camp and collecting considerable data relative to the field and facilities, the flight took off and returned to Luke Field.

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NEW BASIC TRAINING PLANES FOR RANDOLPH

The Secretary of War, Hon. Harry H. Woodring, recently announced the award to the North American Aviation, Inc., of Inglewood, Calif., of an order for 117 Basic Training airplanes.

The total contract, which includes an adequate provision for supply of the necessary spare parts, amounts to $1,432,600. These Training planes are being procured for use at the Air Corps Primary Flying School, Randolph Field, where future American military pilots are now being trained.

The Act of Congress increasing the complement of airplanes in the United States Army Air Corps to 2320 will involve a corresponding increase in the requirements for pilots. In order to meet this demand, the War Department is taking steps at the present time to provide the best possible training facilities in developing, at the Air Corps Training Center, the additional pilots required.

The basic training plane now being purchased is a great advance in design over the basic trainer which has been in use since 1930. The new basic trainer is a single-engine biplace low-wing monoplane, and is powered with the Wright R975-7, single row radial engine developing 400 horsepower. The high speed and landing speed of this plane is intermediate between that of the Primary Training planes and the modern fast combat planes in use in tactical units.

Advances in airplane design during recent years, with a corresponding increase in speed and complexity of equipment on modern aircraft, have made it more necessary than ever to provide an intermediate plane between the two.

Although somewhat slower, this plane is very similar in appearance and general handling characteristics to the modern Pursuit planes, and at the same time has the ease of maintenance, combined with sturdiness of construction which is required in a training plane.

The plane is the result of cooperation between the civilian designers, the Experimental Division of the Army Air Corps and instructors at the Air Corps Training Center, and is another proof of the effectiveness of modern American aviation.

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Albrook Field, Panama Canal Zone, needs help. The News Letter Correspondent says that anyone having a good idea for preventing Panamanian natives from tearing down the wind socks on outlying landing fields, please communicate with Lt. D.D. Graves. The natives use the socks for shirts, oddly enough.

Obituaries

CAPTAIN CHARLES H. HOWARD, AIR CORPS

An airplane accident on the night of October 25th, near Bryan's Mill, Texas, cost the lives of Captain Charles H. Howard and Corporal Edward N. Gibson, Air Corps, both of whom were stationed at Langley Field, Va.

Captain Howard, who enlisted in the Aviation Section, Signal Corps, during the World War, was an efficient and capable officer, an expert pilot, and was particularly well versed in the field of radio communications.

Born at Ashland, Oregon, December 29, 1892, he attended grammar school in Oceanside, Calif.; high school in Prescott, Arizona, and was a student for two years at the University of Arizona.

During the World War he enlisted in the Signal Corps, and after serving for a brief period with Company C, 322nd Field Signal Battalion, Fort Lewis, Washington, he was transferred to Kelly Field, Texas, where he served with the 84th Aero Squadron until April, 1918, when he was assigned to take the ground school course at the School of Military Aeronautics, Texas State University, Austin, Texas. Transferred in July, 1918, to Souther Field, Americus, Ga., for his flying training, he qualified as a Reserve Military Aviator and, on November 7, 1918, he was commissioned a second lieutenant in the Aviation Section, Signal Corps, and placed on active duty with the flying department at Souther Field.

In January, 1919, Captain Howard was transferred to Love Field, Dallas, Texas, and assigned to the engineering department. He also served as Adjutant in addition to performing other duties. From September, 1921, to February, 1922, he was on duty in the aviation repair section at the San Antonio Air Depot.

During the next four years, Captain Howard's duties related mainly to radio communications. He pursued the course of instruction at the Air Service Communications School at Post Field, Fort Sill, Okla.; then the radio instruction course at the Signal School at Camp Vail, N.J., and on July 12, 1923, he was assigned to the Technical School at Chanute Field, Rantoul, Ill., for duty as Instructor in the Communications Department.

In January, 1926, Captain Howard was transferred to the Panama Canal Department, where he served for three years, being on duty with the 7th Observation Squadron at France Field for two years, and with the 25th Bombardment Squadron in the remaining year.

From Panama, Captain Howard was transferred to Rockwell Field, Calif., where he was assigned to the 11th Bombardment Squadron. He also served as Communications Officer of the 7th Bombardment Group. Later, when the Squadron was transferred to March Field, Calif., he was placed in command thereof. A noteworthy flight was performed by this organization when Captain Howard was placed in charge of the Navajo Indian Relief Expedition to Arizona in January, 1922. The Navajo Indian Reservation had been visited by a severe snow storm which isolated it from surrounding communities, and the Indians were facing starvation. The planes under Captain Howard's command carried food supplies, which were dropped at the various Indian villages. The activities of this Bombardment squadron in transporting and dropping food supplies consumed the better part of a week, and no untoward incident occurred despite the hazardous nature of the flying, due to the extremely rugged terrain. This flight was considered the most meritorious one performed by Air Corps personnel for the year 1932, and Captain Howard, for his leadership thereof, was awarded the Mackay Trophy.

During the school year, 1933-34, Captain Howard was a student at the Air Corps Tactical School at Maxwell Field, Ala.

During the summer of 1934, Captain Howard piloted one of the B-10 Bombardment planes in the Army Alaskan Flight, from Washington, D.C., to Fairbanks, Alaska, and return. This aerial expedition of ten B-10 airplanes was commanded by Brigadier General Henry H. Arnold. The flight was completed according to a prearranged schedule in exactly one month. In addition to his duties as pilot, Captain Howard served as Assistant Communications Officer of the expedition.

Following his graduation from the Tactical School, Captain Howard was assigned to duty in the Training and Operations Division, Office of the Chief of the Air Corps. He was appointed a member of the Air Corps Radio Communications Board.

Following the establishment of the HQ GHQ Air Force, Captain Howard was transferred to Langley Field, Va., where he was placed on duty as Chief of the Communications Section with the trmporary rank of Major.

Captain Howard had to his credit over 4,000 hours' flying time. He was the author of various articles dealing most interestingly and convincingly subjects in which he particularly specialized - Bombardment Aviation and Radio Communications.

Corporal Gibson, with the exception of the year 1927, was in the military service continuously since October 3, 1923, the date he enlisted in the Air Corps. He was a native of West Virginia, and was born at Centralia on July 31, 1902. During his career as an Air Corps enlisted man, he served with the 2nd Observation Squadron in the Philippines; the 5th Observation Squadron, the 8th Airship Company, the 2nd Balloon Company and the 96th Bombardment Squadron.

The Air Corps extends its deep sympathy to the bereaved families of these men who died in the service of their country.

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ALERTNESS AVERTS SERIOUS CATASTROPHE

But for the alertness of Sergeants Norris and Musser, of the 20th Bombardment Squadron, Langley Field, Va., the service test of a new type of bombing flare would have ended in tragedy.

A B-10B airplane had just been loaded with six of these flares and, during the final check of the flares on the bomb racks, Sergeant Norris detected the ticking of the timing mechanism of one of them. Quickly realizing the seriousness of the situation, and with a total disregard for their own personal safety, Sergeants Norris and Musser removed the flare and the latter started to dash away with it in his arms. Just as Sergeant Musser was about to emerge from underneath the left wing of the plane, the flare exploded, setting fire to the plane. The force of the explosion threw the Sergeant to the ground. Lieut. A.H. Rogers, the pilot scheduled for the test mission, was in the plane preparing for the take-off at the time of the explosion. In making his exit from the burning plane, he sprained an ankle.

Sergeant Musser sustained slight injuries from the force of the explosion. The fire was extinguished, but not before the left wing of the plane was destroyed.

The handling of this serious situation, says the News Letter Correspondent, was particularly noteworthy, since the plane in which the trouble developed was parked in the center of a group of six B-10B Bombardment planes and, had the fire reached a gas tank, it is very probable that all six of them would have been destroyed.

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REORGANIZATION OF THE 49TH BOMBARDMENT SQUADRON

Squadron reorganization was a matter of considerable interest in the 49th Bombardment Squadron, Langley Field, Va., for the past several weeks, and already the advantages accruing from the new set-up are apparent. The enlisted personnel was increased by 27 men, which greatly facilitates the maintenance of squadron ships.

Separate barracks have also been assigned, and the organization of a separate mess is being enjoyed by the men. The increase of squadron personnel was especially timely, as preparations were under way for the Fort Leavenworth maneuvers, in which the 49th was to be represented by nine B-10B's and full combat crews. The tentative take-off was planned for the morning of September 22nd.

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THE AIR DEMONSTRATION AT FORT LEAVENWORTH

The Correspondent of the Kansas City TIMES, describing the air demonstration given by the General Headquarters Air Force at Sherman Field, Fort Leavenworth, Kansas, on September 25th, states that the event was witnessed by approximately 10,000 spectators crowded on the bluff west of the Missouri River and overlooking the flats on which the field is located. The guests of Brigadier General Charles M. Bundel, Commandant at Fort Leavenworth, were seated on a natural rock ledge overlooking the entire performance.

The demonstration was under the direction of Brigadier General H.C. Pratt, Commander of the Second Wing, GHQ Air Force. All maneuvers were directed from the ground by Lieut. Colonel Carl Spatz, Executive Officer of the 2nd Wing, through the two-way radio system.

In the first event, a flight of six Attack planes attacked a marching column of troops, using a simulated mustard gas. The liquid used was lime water and spotted the blue denim clothing of the marching troops. The Attack planes were flying at a low altitude when the simulated gas was released.

Following the gas raid, the flight of Attack planes was attacked by 18 Pursuit planes. This event gave an excellent conception of the protection which may be given a marching column of men by a squadron of Pursuit planes.

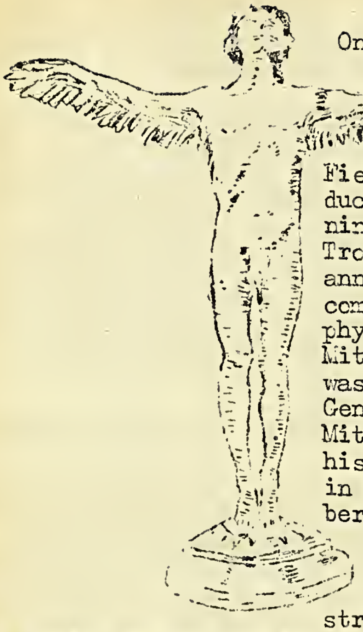
A group of targets representing an infantry battalion on the field was then bombed by nine Attack planes, each carrying twenty 30-pound bombs. The attack was made from approximately 500 feet altitude at a speed of 220 miles an hour.

Immediately after the bombing by the Attack planes, three Bombardment planes dropped nine 100-pound bombs on a circular target and then returned, dropping nine 300-pound bombs.

Organizations participating in the demonstration were the 49th Bombardment Squadron, Langley Field; 17th Pursuit Squadron, Selfridge Field, Mich., and 90th Attack Squadron, Barksdale Field, La.

TWELFTH ANNUAL MITCHEL TROPHY AIR RACES

By the Selfridge Field Correspondent



On Saturday, October 17th, the First Pursuit Group at Selfridge Field, Michigan, conducted the twelfth running of the Mitchel Trophy Air Races. This annual event is the competition for a trophy, the John L. Mitchell Trophy, which was donated in 1922 by General William Mitchell in memory of his brother, who died in France while a member of the 1st Pursuit Group. By the terms of the gift, the Race is restricted to pilots who are active members of the 1st Pursuit Group, for the purpose of fostering finer Pursuit aircraft for the pilots of our Army. The Race was formerly run in connection with the Pulitzer Trophy Races and later with the National Air Races, but since 1930 it has been held at Selfridge Field.

Numerous other events have been added to the Mitchell Trophy Race proper so that the entire afternoon designated for the Mitchell Trophy Race is filled with various events of a military nature calculated to interest and amuse both the civilian and military spectators in attendance. The Mitchell Trophy Air Race now serves a two-fold purpose:

(1) A small charge is made for admission and the money devoted to charitable purposes, being divided between the Army Relief Society and other appropriate charities, and

(2) The average citizen and taxpayer is given an opportunity to see the Army Air Corps in a few of its more interesting phases of work and thereby to become more familiar with and interested in the Army Air Corps.

The 1st Pursuit Group has been extremely lucky in the past in the matter of weather on days designated for the Race. Due to the fact that the Race involves a great deal of preparation by personnel of the Group, it has been impossible in late years to hold this Race during the summer months when good weather might reasonably be expected. The units participating are members of the GHQ Air Force and have regular training to consider above and beyond the conduct of the Mitchell Trophy Races. Whoever controls the weather has been very kind on Mitchell Trophy Day in the past, but this year the Group ran out of good luck. The morning of the Race found a cold raw wind and a driving rain whipping across Selfridge Field.

The first event of the day was scheduled to start at 12:00 noon, and at that time a cold rain was still falling. However, the field already contained some fifteen or twenty thousand spectators, and it was decided to proceed with the program rather than disappoint all these people by postponing the Race. People continued to pour into the field throughout the day in spite of the weather, testifying eloquently to the newly-awakened interest of the civil populace in the doings of the Army Air Corps.

Promptly on the dot of 12:00 o'clock, three United States Naval Reserve airplanes, Grumman F2-F1 fighters, roared out in the rain across the field, and the program was on. Extremely rough air, a high wind, and a ceiling of about 600 feet made the performance of these Naval Reserve pilots a source of great admiration and respect by all who saw their flying. This event was followed at 12:15 by the appearance of the 107th Observation Squadron, Michigan National Guard, who also performed extremely well under the same handicaps.

The next scheduled event, an acrobatic competition for Flying Cadets, was postponed until later in the day, due to the impossible weather conditions, and some of the other events were then moved up on the schedule. One event only was cancelled, namely, the Mass Parachute Jump by members of the Parachute Section at Selfridge Field. A 30-mile an hour wind made this event too dangerous for the men involved.

The acrobatic competition for the Mt. Clemens Trophy, a large bronze cup donated to the Group by the City of Mt. Clemens, Michigan, was won by Flying Cadet Paul F. Helmick, 27th Pursuit Squadron, who hails from Corvallis, Oregon. He piloted a P-26 Pursuit plane. Lieut. Colonel Ross G. Hoyt, Major Jimmy Doolittle and Major Eddie Aldrin, the latter two ex-Army pilots, who judged this event, were high in their praise of the technique displayed by young Helmick and by Cadet Jesse W. Haws, who ran him a close second.

Balloon bursting by two P-26 airplanes of the 94th Pursuit Squadron provided a good deal of amusement to the ground spectators and elicited a good deal of sympathy from the observing pilots who understood the difficulty of this maneuver in a P-26 airplane.

The 94th and 17th Pursuit Squadrons intrigued the spectators with, respectively, an exhibition of six Pursuit aircraft in open formation maneuvers and eighteen aircraft in close formation maneuvers.

Barksdale Field was kind enough to contribute to the show by sending six A-17 Attack airplanes of the 3rd Attack Group. Led by Lieut. H.M. Bailey, these Attack planes put on an excellent show, flying in close formation, simulating attacks on ground targets and dropping parachute bombs on the field. The spectators were extremely interested to notice the low altitudes and technique of these pilots. A special event was put on by Captain Harlan T. McCormick and 2nd Lieut. James O. Guthrie, of the 17th Pursuit Squadron, who staged a skit involving the efforts of a non-flyer to control the gyrations of a PT airplane as it galloped madly about the field.

Three P-26's, piloted by Lieuts. Warburton, Van Auken and C.H. Anderson, thrilled the spectators by acrobatics and maneuvers done in close formation, and Captain Lee Q. Wasser. Air Corps, of Headquarters Squadron, gave an exhibition of acrobatics in a P-26 which proved a source of wonderment to both pilots and laymen. Among other "stunts," Captain Wasser executed a series of maneuvers while flying with wings vertical. All "stunts" were this year performed above 1500 feet.

The speed events of the day consisted of three races, the Junior Birdmen Trophy Speed Dash, the Boeing Trophy Race and, of course, the John L. Mitchell Trophy Race. In the speed dash for the Junior Birdmen Trophy, Lieut. Joe S. Anderson, Air Reserve, flew a P-26B; 2nd Lieut. Elbert H. Schlanser, Air Reserve, a P-26A; 2nd Lieut. Elmer E. McKesson, Air Reserve, a PB-2A; and 2nd Lieut. Franklin M. Cochran, Air Reserve, a P-26C. This event was for a timed speed record, both ways over a one-mile course laid out on the flying field, and was won by Lieut. McKesson, of Richmond, Va., who attained an average speed of 251.74 m.p.h. The ship in which Lieut. McKesson won this event was a thing of beauty to behold,- every rivet, screw, and other protuberance had been taped over to improve streamlining, and McKesson and his crew chief had spent the previous several days waxing the entire airplane, with the result that the hangar floor was piled high with the bodies of flies which had alighted on the wings thereof, slipped and broke their necks. Lieut. Joe S. Anderson, of Honea Path, S.C., who won second place, attained a speed of 242.34 miles per hour.

The Boeing Trophy Race, consisting of ten laps around a ten-mile closed course in Boeing P-26A's, was won by 2nd Lieut. Eugene Brecht, Jr. of the 17th Pursuit Squadron, Brecht, who hails from San Diego, Calif., made the excellent time of 203.37 miles per hour, which was much higher than expected of these well-worn aircraft, the same planes having flown in two previous Mitchel Trophy Races and established the previous record of 216 miles per hour two years before. Second place in this event went to 2nd Lieut. Harold L. Kreider, Air Corps, of Seffner, Florida, a member of Headquarters Squadron, and third place to 2nd Lieut. Raymond P. Todd, Air Corps, of North Haven, Conn., a member of the 27th Pursuit Squadron.

When the time arrived for the Mitchell Trophy Race, the pièce de résistance of the day, the skies had cleared somewhat and, although it was rather chilly for the spectators, the weather was almost bearable. Some 40,000 people watched the running of this race, which consisted of five laps around a twenty-mile closed course in the latest type of Pursuit airplane, the Consolidated PB-2. This Race, the oldest established air race run in this country, is almost wholly a test of the pilot's skill in flying a closed course, inasmuch as each competing airplane has previously been set not to exceed a certain maximum RPM at ground altitudes. This, of course, is necessary because of the fact that these airplanes are designed to operate most efficiently at high altitude, and the constant danger of burning out the motors while racing at sea level. The Race was conducted by having each aircraft dive in turn out of a Lufbery Circle across the starting line, at which point the electric timers picked up the record of each airplane. Under these conditions it was extremely hard to tell during the conduct of the Race itself which aircraft was actually ahead during the Race. About the third lap, the time of each airplane was announced up to that point, and it became apparent that the Race was between Lieuts. Sterling, Neely and Bell. So close was the performance of the various ships that only once during the Race was any airplane passed by another. After the aircraft had landed and the times were announced, Mrs. William Mitchell, the widow of General "Billy" Mitchell, donor of the Trophy, presented it to 1st Lieut. John M. Sterling, Air Corps, of New York City, who had attained a speed of 217.546 miles an hour to break the existing record set by Major Fred C. Nelson, Air Corps, in 1934.

Second place went to Lieut. Harold L. Neely, of Huntington, Tenn., who also broke the previous record with a speed of 217.039. Third place went to Lieut. William J. Bell, of Buffalo, N.Y., whose average speed was 216.162 miles per hour.

Numerous distinguished guests braved the weather to watch the Races this year, among them being Brigadier Generals Henry H. Arnold and A.W. Robins; Group-Captain Howe, British Air Attaché; Squadron Leader Curtis of the Royal Canadian Air Force; Lieut. Colonel Ross G. Hoyt, of the Office of the Chief of the Air Corps; Major Reed Landis, war-time "Ace" with the 94th Pursuit Squadron; Mrs. William Mitchell, widow of the beloved General 'Billy," who brought her small son, Billy Mitchell, Jr., to see the Races; Major "Jimmy" Doolittle, of the Shell Oil Company; Major "Eddie" Aldrin of the Standard Oil Company; Lee Gehlbach, former member of the First Pursuit Group, and a great many other distinguished guests, both from civilian and Army circles. Bad flying weather on the day of the Race kept a great many flying visitors on the ground, including the Langley Field, Mitchel Field and Washington contingents.

The Race was immeasurably helped by the cooperation and generosity of practically every newspaper, radio station and advertising bureau in the city of Detroit, also in nearby Mount Clemens. The entire program was broadcast by three different radio stations, one with a national hook-up, and was covered by such newspapers as the New York Times and the Chicago Tribune, in addition to all local news services. Short wave radio station W8XWJ, Detroit, broadcast for the benefit of foreign possessions, and the members of the Army Amateur Net. Considering the weather and the long drive to the field from Detroit, the officers of Selfridge Field feel that the crowd, which was estimated at 40,000 people, is highly indicative of the interest, not only local but national as well, which has grown up around the Mitchell Trophy Air Races. Every effort was made during the day to show, by means of displays and exhibits, not only the flying activities of the Army Air Corps, but the ground and other activities. Traffic, parking and other details of the handling of the crowds functioned perfectly.

The entire field was cleared of some 12,000 cars, numerous aircraft, and all pedestrians within forty minutes after the last ship had landed. In addition to making friends for the Air Corps, Selfridge Field feels that it has every right to boast of a record of twelve years of these Races in which not a single pilot or spectator has been as much as scratched, and only one aircraft has been slightly damaged. This record speaks a world of praise for the splendid work done by those officers who arrange and control the Races, but whose names do not appear in the papers. Not once during the show did events lag. Visitors have been emphatic in their praise of this meet as the best-handled and most interesting in the country, particularly praising the zero interval of time between events.

Selfridge Field wishes to take this humble means of thanking all who helped them with the Twelfth Mitchell Trophy Air Races, and to say that they are looking forward to seeing you next year under sunny skies.

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NEW RADIO EQUIPMENT FOR THE AIR CORPS

In order to keep all concerned informed as to the progress of the purchase and installation of radio equipment for the new Air Alert Net and Radio Beacons, the following is published:

The first article, "Western Electric 14-C Transmitter," has been tested at Mitchel Field, and the contractor will now proceed with production models, which should be ready for installation about March, 1937.

There has been considerable delay in the preparation of specifications for the Radio Beacon equipment, but it is believed that all controversial points have now been cleared up, and it is expected that this equipment will be ready for installation late in the present Fiscal Year.

Several changes have been made in the plans for these installations. Since the Army's occupancy of Moffett Field is indefinite, it has been decided not to make any fixed installations at that station at the present time.

The Department of Commerce plans a beacon installation near Love Field, at Dallas, Texas. Therefore, it has been decided to place a high frequency marker only at Hensley Field in lieu of a low powered beacon.

Midland, Texas, being on the present beacon routes, it is planned placing a high frequency marker at that point in lieu of a low powered beacon.

All other installations will be made as previously planned.

Funds for the procurement of low powered Airport Transmitters for various Air Corps stations have been included in the Signal Corps estimates for the Fiscal Year 1938. If these items are approved, it is hoped that the necessary equipment will be supplied early in the Fiscal Year 1938.

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ENGINEERING - SUPPLY CONFERENCE

The Annual Engineering and Supply Conference was held at the Materiel Division, Wright Field, Dayton, Ohio, between October 5th and 9th, inclusive, the usual representative group of officers whose duties are in connection with engineering and supply for the Air Corps being in attendance.

The Conference was held in the Wright Field auditorium and opened on the morning of October 5th by Major General Oscar Westover, who outlined briefly the purpose of the Conference and the methods under which the present system of procurement and supply operates. Brigadier General A.W. Robins, Chief of the Materiel Division, followed General Westover's remarks with an address of welcome to visiting officers, briefly outlining the conditions under which meetings would be held.

The five days were filled to overflowing with round table discussions, lectures and visits to the engineering laboratories and supply and maintenance offices at Wright and Patterson Fields. Among the visiting officers in attendance were the following:

Major General Oscar Westover, Chief of the Air Corps.

Colonels Chalmers G. Hall, L.S. Churchill, Frank M. Kennedy and Jacob Wuest.

Lieut. Colonels J. H. Houghton and J. T. McNarney.

Majors H. G. Adams, Ames S. Albro, A. Foulk, C.R. Glenn, S.J. Idzorek, J.T. Morris, John P. Richter, H. Riley, A. E. Simonin, Lowell Smith, C.W. Steinmetz, Charles W. Sullivan, Ralph Walker, John Whitely.

Captains James C. Cluck, E.V. Elder, James T. Curry, E.V. Harbeck, Gilbert Hayden, Guy Hill, M.E. Tillery and J.A. Austin.

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STRATOSPHERE LECTURES POPULAR

Major Albert W. Stevens, Air Corps, of the Materiel Division, Wright Field, Ohio, has been much in demand for lectures on the now famous stratosphere flight.

On October 27th, he appeared before Augustana College, Rock Island, Illinois; on October 28th, before the Young Men's Bureau, Cedar Rapids, Iowa; on October 29th, Grinnell College, Grinnell, Iowa.

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OFFICERS' MESS – MARCH FIELD, CALIF.

AIR CORPS
NEWS LETTER

ISSUED BY THE OFFICE OF THE CHIEF OF THE AIR CORPS.
WAR DEPARTMENT WASHINGTON, D.C.

NOVEMBER 15, 1936.

VOL. XIX NO. 22

VOL. XIX **Air Corps News Letter** NO. 22.

Information Division
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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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COUNTING SHEEP FROM THE AIR

By the Luke Field Correspondent

The Army Air Corps in Hawaii has from time to time attracted attention by cooperation with civil authorities in such activities as sowing seed from the air in connection with reforestration and soil conservation; the bombing of dangerous lava flows, as in December, 1935; searches for persons lost in the mountains of Oahu, or for missing airplanes, as, for example, the search for the Australian aviator, Ulm, etc.

The latest project of this nature has been the counting of sheep on the slopes of Mauna Kea, on the Island of Hawaii, for the local forestry service.

Domestic sheep, escaping from lowland corrals, find their way to the upper levels, between seven and eight thousand feet altitude, and cause great destruction to the young struggling timber growth, resulting in increasing erosion. Periodic round-ups are organized to drive these sheep to the lower levels where they are slaughtered but, owing to the distances involved and the rugged nature of the terrain, this work is very laborious, due in particular to the altitude. For lack of information as to the location of the largest herds, the drives are often ineffective.

In order to overcome the latter difficulty, the Chief Territorial Forester, Mr. C.S. Judd, recently requested that the Army Air Corps make a reconnaissance of the slopes of Mauna Kea with a view to determining the localities in which the majority of the wild sheep are collected and to estimate their number. In response to this request, three B-12A airplanes of the 4th Observation Squadron flew to Hawaii on the morning of October 6th. Dividing the area into zones, the planes flew around the mountain, each at a different elevation, and then returned to Luke Field.

The flight leader, 1st Lieut. Fay R. Upthegrove, Air Corps, reported it was very difficult to estimate the number of sheep with any degree of accuracy, due to the rough terrain and the undergrowth. They were able to determine, however, that the largest flocks were located on the Southwestern side of the mountain, and plans which are being laid for a forthcoming drive will be directed to that locality. It is estimated there are at present in the neighborhood of 40,000 so-called wild sheep on the mountain slopes.

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CAPTAIN ARMSTRONG WINS HENRY S. WELLCOME MEDAL AND PRIZE

Captain Harry G. Armstrong, Medical Officer in charge of the Physiological Research Laboratory at Wright Field, Dayton, Ohio, has been announced the winner of the Henry S. Wellcome gold medal and a cash prize of $500, as the author of the best paper submitted in a contest, the subject being "The Importance of Coordinating the Military and Naval Medical Services with the Civilian Medical Profession."

This competition was open to all Medical Department officers, Acting Assistant and Contract Surgeons of the Army, Navy, Public Health Service, Organized Militia, U.S. Veterans' Administration, U.S. Volunteers, and the Reserves of the United States, commissioned medical officers of foreign military services, and all members of the Association of Military Surgeons of the United States. The length of the essay was fixed at between 3,000 and 10,000 words.

Captain Armstrong's essay will be published in the "Military Surgeon," which is the organ of the Association of Military Surgeons. The award will be presented at the Convention of the Association of Military Surgeons in Detroit.

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Much attention and comment has been occasioned by the installation of a new "Wind Indicator" at the Advanced Flying School, Kelly Field, Texas. The Indicator is equipped with electric lighting and is a standard piece of equipment, having been designed by the Air Corps Materiel Division. Everyone views it with much favor.

CODE INSTRUCTION FACILITIES AT AIR CORPS TECHNICAL SCHOOL

By 1st Lieut. F.A. Allen, Air Corps

The Department of Communications of the Air Corps Technical School, Chanute Field, Rantoul, Ill., is highly pleased with the modern equipment it is using in connection with Code instruction. The entire system is so simple, yet so flexible, that it is possible for two instructors to handle up to three hundred students a day without confusion or loss of efficiency.

Five letter Code groups and press transmissions, all at various speeds, are furnished by five automatic, tape controlled transmitters. A key board type tape perforator is employed for "cutting" all tapes for use with the automatic transmitters. Direct current power for the operation of the automatic transmitters and alternating current tone are supplied by two specially designed motor generator sets, one of which is constantly in use while the other is retained as a spare. Long and short wave receivers are employed to intercept actual radio traffic which is distributed to the advanced student positions. The "Ink Recorder," a special visual recording machine, enables the instructor to make a graphic record of any student's sending; individual sending ability may also be checked by wax cylinder recordings on an Ediphone. By means of the ink recorder and the Ediphone, it is possible to show the student his transmitting mistakes both visually and aurally.

Present facilities provide for the simultaneous training of 104 students; 84 of these can be accommodated in the main Code room, while the remaining 20 are handled in the Code room annex. The 104 student positions are organized into smaller groups of 20 or less positions, and the various headphones and keys in each group are connected to standard BD-57 switchboards furnished by the Signal Corps. These switchboards are used exactly as supplied with the exception that the tone alternators built into each switchboard are not employed. In the front of the room, near the Code machines, is installed a locally fabricated master distribution panel on which is mounted essentially nothing but telephone jacks. Installed adjacent to each of the BD-57 switchboards is a small panel on which is mounted either three or four jacks which are connected by twisted pair "program channels" with the master distribution panel. The only connection between the Code machines at the front of the room and the seven BD-57 switchboards is through the medium of nineteen twisted pairs. "Patch cords" are employed at the main distribution panel to connect any Code machine to any one or more of the nineteen program channels terminating at the seven local BD-57 switchboards. Patch cords are again used between the program jacks located adjacent to each BD-57 and its corresponding switchboard.

With the above described installation, the following is possible:

(1) Send simultaneously any five different Code speeds to any selected groups of students provided not more than three different speeds are dispatched to any one of the seven local BD-57 switchboards.

(2) Intercept actual long, medium, or short wave transmissions by means of radio receivers and dispatch the receiver output to any student position or group of positions.

(3) Actual static can be tuned in on a receiver and superimposed on the output of any automatic transmitter to give students practice in reception through interference.

(4) The sending practice of any selected student can be amplified and reproduced by loud speaker so that all students in the Code room can hear it.

(5) The sending practice of any selected student can be recorded on the ink recorder, thus providing a permanent visual record, on paper tape, of that student's sending ability.

The system is so simple and flexible that, as Senior Code Instructor, Tech. Sergeant Claude G. Waters, puts it - "Every day I discover it will do something else." Although the new system has been in use for over a year, during which time almost two hundred students have been handled, no major improvements have been conceived which would materially change the existing system.

When a new student is assigned to the Department of Communications, he is administered a Code Aptitude Test, developed by the Signal Corps. This test is designed to measure the ability of an individual to learn the Code; in general, a high score on the Code Aptitude Test is an indication of a student's ability to learn the Code rapidly. In its present form the test consists of seventy-eight pairs of Code groups whose similarity or dissimilarity the student indicates by underlining a "Yes" or "No" on the test sheet. The test is contained on phonograph records and it may be given in about 20 minutes; no previous knowledge of the Code is necessary.

All beginning students are also tested to determine their initial Code speed and Typing speed; students whose knowledge of the Code is sufficiently advanced do not take the primary phases of Code instruction, while students who can type by touch at the rate of 20 words per minute or better are excused from all typing instruction. When any student attains a Code speed of 12 words per minute, copying by pencil, he is required to copy Code reception by typewriter. From this time on he practices copying by pencil and typewriter, spending alternately a week on each method until he is able to copy 16 words per minute by either method. He is then transferred to a 20 word per minute table, where he uses only the typewriter for copying. When students become proficient in the use of the hand telegraph key for transmitting, they are taught how to use the "bug," a semi-automatic, manually operated key enabling them to transmit at speeds greater than 20 words per minute.

During school year 1935-36, the average entering speed of 180 students was 6 words per minute, the average Code aptitude was 56, and the average student attained a speed of 21 words per minute in 165 hours of instruction.

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NAVIGATION INSTRUCTION IN 88TH SQUADRON

Four student navigators completed the ground school course in Celestial Navigation in the 88th Reconnaissance Squadron, Hamilton Field, Calif., on October 9th. Flying training in both dead reckoning and celestial navigation is progressing as rapidly as limited equipment will permit. Those who have completed the ground school course are Second Lieuts. G.E. Pierce, Air Corps; W.W. Pannis and L.A. Walker, Air Reserve, and Flying Cadet H.F. Bronson.

Records of accuracy in E.T.A. (estimated time of arrival) and course errors are being kept, and the instructor, 1st Lieut. Richard C. Lindsay, Air Corps, states that very satisfactory progress in arriving at the requirements of the GHQ Training Directive is being shown.

Major Newton Longfellow assumed command of the 88th, on October 8th, relieving Major Clarence P. Talbott, who took up the duties of S-3, Hamilton Field Air Base Headquarters.

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BOMBING UNDER NEW TRAINING REGULATIONS

The 9th Bombardment Squadron, Hamilton Field, Calif., has completed its bombing to determine bombardment patterns, and for the past two weeks has been bombing under the new TR 440-40 (tentative).

Lieut. Dale O. Smith holds low score for practice with a mean radial error of 8.4 mils at 7,000 feet, at a cruising speed of 167 miles per hour.

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Lieut. Colonel Calvin E. Giffin relinquished command of the 5th Air Base Squadron, Hamilton Field, Calif., on October 26th to take the position of Base Inspector. He was succeeded by Maj. Edward C. Black, recently of Langley Field.

FIELD MANEUVERS FOR RADIO STUDENTS

Students of the 18th Composite Wing Communications School, Luke Field, T.H., were recently engaged in "field maneuvers" for four days. The class was divided into six teams, each team operating a field radio set. The instructors, Corporal Dickson and Private Pound, were kept quite busy the first two days but had little to do afterwards as the students finally got the hang of it. After spending the first day in the hot sun, station operators soon learned that the shady side of a tree was a much cooler place to set up a station. The school is under the direction of 1st Lieut. Daniel A. Cooper, Air Corps, who feels that the class will turn out some A-1 operators and mechanics on graduation in November.

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BOARD MEETINGS AT MATERIEL DIVISION

The month of October at the Materiel Division of the Air Corps, Wright Field, Dayton, Ohio, was particularly marked by a multiplicity of Aircraft Board meetings. Three convened on October 12th.

A Board to evaluate the Corps and Army Observation airplanes as to utility, type and performance characteristics consisted of the following-named officers:

Major F.H. Pritchard, Scott Field.
Major W.B. Souza, office of the Chief of the Air Corps, Washington, D.C.
Major T.W. Blackburn, National Guard Bureau, Washington, D.C.
Major George C. McDonald, Mitchel Field.
Lieut. J.O. O'Hara, Brooks Field.
Captain Stanley M. Umstead, Wright Field.

Douglas and North American were the two Observation airplanes under consideration.

The second Board convened to draw up recommendations for the consideration of the Chief of the Air Corps regarding the practicability of adopting an all-purpose airplane for student training at the Primary Flying School. This Board was composed of Majors L.R. Hewitt, R.D. Knapp, Captains O.P. Weyland and W.G. Bryte. All the officers, except Major Hewitt, were from Kelly Field, Major Hewitt being stationed at Randolph Field, Texas.

The third Board convened for the purpose of passing upon and testing instrument landing equipment. The officers serving were Lieut. Colonel A.H. Gilkeson, Langley Field; Lieut. M.L. Harding, Hamilton Field; Major C.M. Cummings, Captains J.S. Griffith and G.V. Holloman, Wright Field.

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Captain Clarence C. Wilson, Air Corps, was appointed to the temporary rank of Major on November 9, 1936.

Valor

Announcement was recently made by the War Department of the awards of the Distinguished Flying Cross to Captains Frank G. Irvin and John S. Griffith, Air Corps, U.S. Army, with the following citation:

"Frank G. Irvin, Captain, Air Corps, United States Army, and John S. Griffith, Captain, Air Corps, U. S. Army. For heroism while participating in an aerial flight from Wright Field, Ohio, to Indianapolis, Indiana, July 22, 1936. While making a carbon monoxide test flight of a new Army airplane at an altitude of 2,000 feet, the engine burst into flames and smoke. Captain Irvin, the pilot, and Captain Griffith, copilot, without thought of themselves directed the crew of observers to jump and then by switching gas valves and using fire extinguishers succeeded in extinguishing the fire, thereby preventing not only possible loss of life but destruction to valuable government property."

The War Department recently announced also the award of the Soldier's Medal to Staff Sergeant Willie D. Norris and Sergeant Wayne M. Musser, Air Corps.

The citation in the case of Sergeant Norris, chief armorer, 20th Bombardment Squadron, General Headquarters Air Force, United States Army, is as follows:

"For heroism displayed at Langley Field, Va., August 31, 1936. Staff Sergeant Norris and Sergeant Wayne M. Musser set and installed the time fuses on six large experimental flares; hung them from the bomb bay racks of an airplane and withdrew the safetying pins from the flares. Hearing a noise diagnosed as the time fuse functioning, Staff Sergeant Norris directed that they (Sergeant Musser and Staff Sergeant Norris) unlatch the ticking flare and carry it to a place of safety. Staff Sergeant Norris held the flashlight while Sergeant Musser unlatched the ticking flare and ran with it in his arms towards the flying field. He reached a point about twenty feet from the bomb bay when the flare exploded, shooting the burning flare back toward the airplane under the left wing near the fuselage where the intense heat ignited the wing. The heroic and timely action of Staff Sergeant Norris prevented the possible loss of human life and undoubtedly great destruction to valuable government property."

In the case of Sergeant Musser, Armament Section, 20th Bombardment Squadron, General Headquarters Air Force, United States Army, the citation is as follows:

"For heroism displayed at Langley Field, Virginia, August 31, 1936. Sergeant Musser and Staff Sergeant Willie D. Norris, Chief Armorer, set and installed the time fuses on six large experimental flares; hung them from the bomb bay racks of an airplane and withdrew the safetying pins from the flares. Hearing a noise diagnosed as the time fuse functioning, Sergeant Musser unlatched the ticking flare and ran with it in his arms towards the flying field. He reached a point about twenty feet from the bomb bay when the flare exploded, shooting the burning flare back toward the airplane under the left wing near the fuselage where the intense heat ignited the wing. The pilot having sprained his ankle in his attempt to escape from the burning plane, lay dangerously near the flames. Sergeant Musser, seeing his plight, assisted in carrying him to safety. The heroic and timely action of Sergeant Musser prevented the possible loss of human life and undoubtedly great destruction to valuable government property."

So far as jumping with a parachute is concerned, Captain Irvin knows what it is all about, for he is a member of the mythical Caterpillar Club, into which he was initiated on July 13, 1934. At that time, while on duty in his present position as test pilot at Wright Field, Dayton, Ohio, he was flight testing a Pursuit airplane equipped with skiis to ascertain the effect of this type of landing gear on the plane's maneuvering ability and stability in flight. During the course of a dive, the skii mechanism went awry and, despite all efforts of the pilot, he was unable to bring the plane into a level flying position. The plane continued in the dive at a speed of between 280 and 300 miles per hour, and, after losing about 1500 feet altitude, Captain Irvin "bailed out."

Captain Irvin was born at Greencastle, Indiana, June 21, 1902. He graduated from DePauw University in 1924 with the degree of A.B. Appointed from civil life a second lieutenant in the Regular Army, June 30, 1925, he served with the Infantry until September, 1926, when he was detailed to the Air Corps for flying training. Graduating from the Primary Flying School, Brooks Field, Texas, February 26, 1927, and from the Advanced Flying School, Kelly Field, Texas, where he specialized in Pursuit Aviation, on August 1, 1927, he was rated "Airplane Pilot" and assigned to duty with the 1st Pursuit Group at Selfridge Field, Mt. Clemens, Mich.

Captain Irvin was stationed at Selfridge Field until June 24, 1929, serving with the 27th Pursuit Squadron. He was then transferred to Kelly Field, Texas, where he served with the 43rd School Squadron for one year and then until May 11, 1934, as flying instructor at the Advanced Flying School. From Kelly Field, Captain Irvin was transferred to Wright Field for duty as test pilot.

Captain John Sharpe Griffith, Air Corps, is a veteran of the World War, serving with considerable distinction during that great conflict, as evidenced by the fact that he bears the unofficial title of "Ace," and was the recipient of the Distinguished Flying Cross and bar (British); Order of Grand Duke Vladimir, Order of St. Anne (Russia).

Born in Milford, Delaware, November 26, 1898, Captain Griffith graduated from the University of Washington in 1917. Immediately following his graduation, he joined the British Army, serving during and after the war with the British Royal Flying Corps and the Royal Air Force from July, 1917, to January, 1921, as a 2nd Lieutenant, then as 1st Lieutenant and Captain. Prior to going overseas he attended ground school in Canada, and he received his flying and gunnery training in English schools. He was on flying duty in England, France, Russia and Egypt. During the period of hostilities he was a member of the 60th Squadron, Royal Flying Corps, for nine months in France, 1917-1918; and of the Royal Air Force for nine months in Russia in 1919. During his war flying he was officially credited with the destruction of nine enemy aircraft (7 airplanes and 2 balloons). He accumulated over 800 hours' flying time during his service with the British air arm.

Captain Griffith applied for transfer to the American Air Service, but before the necessary formalities could be completed the Armistice was signed. Resigning from the British Royal Air Force in 1921, he returned to the United States, and in November, 1921, passed the examination for a commission as 2nd Lieutenant in the U.S. Army. For a short time he was assigned to the Infantry. His application for detail to the Air Service being approved, he was assigned as student at the Primary Flying School at Brooks Field, Texas, to take a refresher course in flying, November 23, 1922. Graduating in May of the following year, he was transferred to the Advanced Flying School, Kelly Field, Texas, where he completed the advanced course (specializing in Pursuit) and graduated January 31, 1924. He was rated "Airplane Pilot," effective February 16, 1924.

Retained at Kelly Field for duty as flying instructor until October, 1925, Captain Griffith was then transferred to the Hawaiian Department, where he served with the 19th Pursuit Squadron at Luke Field as Engineering Officer for 13 months; as Assistant Armament Officer and Adjutant for 5 months and as Operations Officer for 3 months. Towards the end of his tour of duty in Hawaii he was on duty for 4 months at Wheeler Field as Assistant Operations Officer of the 18th Pursuit Group.

Returning to Kelly Field on October 19, 1928, Captain Griffith was on duty as Flying Instructor at the Advanced Flying School for 16 months; Assistant Post Operations Officer for 3 months, and Instructor at the School for Flying Instructors at Duncan Field, San Antonio, for two months. At his next station, Selfridge Field, Mich., where he reported on August 1, 1930, and was assigned to the 17th Pursuit Squadron, he served as Operations Officer for 5 months; Ordnance Officer, 2 months; and with the 1st Pursuit Group as Information Officer for 17 months; Adjutant, 3 months; and Operations Officer for one year.

On June 29, 1932, Captain Griffith again returned to his old stamping ground, Kelly Field, where he served as Flying Instructor at the Advanced Flying School and Commander of Flight "A" of the 43rd School Squadron. While assigned to Kelly Field, he was on detached service at various periods, being one of the pilots in the Air Corps expedition of 10 B-10 Bombardment planes which were flown from Washington, D.C., to Fairbanks, Alaska, and return, in the summer of 1934. He was also on temporary duty at the Materiel Division for two months and at the Advanced Aerial Navigation School at Rockwell Field, Calif., for 1½ months.

Transferred to duty in the Office of the Chief of the Air Corps, Washington, D.C., Captain Griffith served in the Training and Operations Division from March 22, 1935, to January 22, 1936, and then, after about two months' service at Bolling Field, D.C., with the GHQ Air Force he was, in March, 1936, assigned to duty at Wright Field, Dayton, Ohio.

In 1929, while stationed at Kelly Field Captain Griffith made a flight in a P-1B Pursuit airplane to Seattle, Wash., via El Paso, Texas; Tucson, Arizona; March and Crissy Fields, Calif., and Medford, Oregon, and covered the total distance of 2,185 miles in an elapsed time of 18 hours and 50 minutes. In 1931 he was the leader of the "Three Turtles," famous Air Corps acrobatic team at the Cleveland Air Races.

Captain Griffith is the leading World War "Ace" now in service with the Army Air Corps, although he is not listed among the American "Aces" because his entire service was with the British Army.

He is probably the only officer in the Army Air Corps having the distinction of possessing the "Distinguished Flying Cross" decoration from both the American and British Governments.

NEW CONTROL TOWER FOR BOLLING FIELD

The steady increase in air traffic at Bolling Field and the new aerial traffic control regulations of the Bureau of Air Commerce, Department of Commerce, along the airways are daily becoming a greater problem for both pilots and operations personnel. The necessity for aerial traffic control by radio and electric lights is becoming more and more evident, due to the great number of commercial and Army and Navy planes in the vicinity. In bad weather and night flying, air traffic control is also essential.

To solve this problem, plans are under way to construct a traffic control tower on the west end of the Engineering Hangar roof. This location will afford a clear view of the field and immediate vicinity and will facilitate the control of planes from all directions. In the tower will be installed sufficient radio receivers to guard all required frequencies, remote controls for alert radio nets for field traffic and station to station communication, electric lights for traffic control and field lighting controls. The tower will be connected by interphone to the Operations Office and to the Department of Commerce Airways Traffic Control Station at Washington-Hoover Airport. The control tower and Operations will operate on a system similar to that used by Department of Commerce towers at Cleveland, Ohio, and Newark, New Jersey, which will require a twenty-four hour schedule and close cooperation with Department of Commerce stations in the eastern portion of the United States. The operation of the tower will require additional personnel in both Operations and the Communications Department and added training for the enlisted men.

The Chief of the Airways Traffic Control Division of the Bureau of Air Commerce, Department of Commerce, has offered to cooperate in the training of six men for these duties, and they will report to the manager of the Newark Airport at Newark, New Jersey, for four days' training under ideal conditions.

The successful operation of the control tower will require all military and naval planes, with Bolling Field as their destination, to submit flight plans prior to their departure from their last stop. These flight plans will be transmitted to Bolling Field by Department of Commerce teletype or by station to station radio. If the planes are equipped with radio, they will be required to contact the control tower five minutes before arriving over the field. All planes departing from Bolling Field will submit flight plans to the Operations Office and then check with the control tower for last minute instructions before take-off.

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BOLLING FIELD HAS AMATEUR RADIO STATION

An amateur radio station belonging to the Bolling Field command has recently been installed in a small room in the attic of the new barracks. The equipment is available to all members of the post who have an amateur license, and will be a means of training in radio operation, both phone and C.W. Personal messages will also be transmitted to friends at other Army posts.

The equipment was installed by members of the Post Communications Department in their spare time, and consists of one 75 watt radio-phone transmitter and one 100 watt C.W. transmitter. On recent tests, operators have made contacts as far as the West Coast. The call letters of this station are W3FLM, registered under the name of the Post Communications Officer, Lieut. S. K. Robinson. Any station wishing to send messages to Bolling Field may arrange a schedule by letter.

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CHEMICAL WARFARE DRILLS AT HAMILTON FIELD

No part of combat training is neglected in the training program at Hamilton Field, San Rafael, Calif. In addition to bombing practice, flight training, the solving of tactical problems and the innumerable events and drills that constitute the life of an Air Corps soldier, preparation for their own protection is not disregarded.

As a consequence, regularly scheduled chemical warfare drills are held monthly. Each officer and enlisted man is required to spend a minimum of one hour per month performing his normal duty while wearing the gas mask. No work is disregarded during this training period. All have now become familiar enough in wearing the mask so that there has been attained the ability to perform all duties with the minimum loss of efficiency. Shops continue to function, mechanics do their routine duties, and the administrative offices operate unimpeded. Even the Civil Service employees participate in the regular gas mask drills. The greatest difficulty encountered is the inability to understand and impart information over the telephone, due to the muffling of the voice when mask is worn.

Everyone has become interested in this training and, while a good many jokes

(Continued on page 18)

FIELD EXERCISES FOR GRADUATED ARMORERS

By Captain R.D. Reeve, Air Corps

With the advent of the GHQ Air Force, and with the realization that the fighting squadrons must have thoroughly trained armament personnel, recognition has been given to the fact that a graduate armorer of the Air Corps Technical School must have had actual field experience prior to qualification for duty as an experienced armorer in a tactical squadron. Heretofore it has been impossible to give that training at the Air Corps Technical School, handicapped as we are by lack of range facilities in this area.

A study of available gunnery sites was made, and it was decided that the Maxwell Field Gunnery Camp at Valparaiso, Florida, was best suited to our needs. Accordingly, a request was made to the Chief of the Air Corps for permission to conduct field exercises for an additional period of two weeks, upon termination of each armorers class at the Technical School at Chanute Field, Rantoul, Ill. Approval, also authority to use the range at Valparaiso, followed.

The period, October 19-31, inclusive, was set for the first exercise. On October 18th, all personnel departed for the sunny south. The writer, flying as passenger with Colonel Junius W. Jones, Commandant of the School, in an A-17 plane, landed at Valparaiso after a most enjoyable four-hour flight.

Upon alighting, Master Sergeant Lunday, noncommissioned officer in charge, in the absence of Captain Rich, greeted us, escorted us to our tents, and informed us that everything was in readiness for our two weeks' stay. By evening, the entire personnel of the Department of Armament had arrived. They were:

Captain H.W. Anderson, Air Corps, Commanding and Operations Officer.

Captain R.D. Reeve, Air Corps, Armament and Range Officer.

1st Lieut. N.H. Ives, Air Corps, Engineering Officer.

1st Lieut. I.L. Farman, Air Corps, Communications Officer.

1st Lieut. F.G. Allen, Air Corps, Recreation Officer.

Technical Sergeant A.G. Junkert, Air Corps, Noncommissioned Officer in Charge of Field Exercises and First Sergeant.

Technical Sergeant C.E. Sudduth, Planning Assistant.

Sergeant A.L. Baize, Instructor.
Private L.S. Ringo, Instructor.
Four Crew Chiefs.
Six Armament students.

Captain G.K. Heiss, Ordnance Department, Technical Advisor to the Director, arrived two days later, having been delayed at Chanute Field.

Firing commenced Monday morning, October 19th, using the following airplanes: A-17, PB-2 and P-12. Guns had been installed and sights aligned prior to departure, and everything was in readiness. For the first time in the history of the Department of Armament, armorers were receiving actual instruction in installation and maintenance of armament equipment in modern aircraft. The pilots accompanying the flight were receiving gunnery practice using the latest equipment. Many had not had practice for a number of years.

Effort was made to give the students every type of malfunctioning and trouble which they would encounter while servicing aircraft in the fighting squadrons. Some minor troubles were experienced with equipment, but it was welcomed, the primary purpose of the expedition being to give the armorers as much practical training as possible.

No. A-8 or P-26 airplanes being available at Chanute Field, Colonel Jones made trips to Barksdale and Maxwell Fields, where he borrowed one of each type. In consequence, the students received instruction on every service type of aircraft.

On Thursday, a contingent from the Tactical School arrived for gunnery, and the students were turned over to Lieut. Myers, Armament Officer, Air Corps Tactical School, who used them in servicing his aircraft, thereby giving them opportunity to operate with an actual squadron armament section. This experience was invaluable, and it is hoped that on future trips we will have further opportunity to do the same thing.

During the second week, periods were utilized to give the students instruction in loading and fuzing of demolition, practice, and fragmentation bombs under actual service conditions.

A practical course in malfunctions was given, and it is felt that each individual was well qualified to serve in a Bombardment squadron at the completion of bombing exercises. The instruction was given on both the B-4 and B-10 airplanes.

Later in the week all students fired the turret gun in the B-10 and were given further practical experience in malfunctions of flexible guns.

Fine weather was experienced during our entire stay, and opportunity was given everyone to engage in swimming, fishing and golf. The quarters and mess were very satisfactory, and Captain Rich is to be complimented on his fine camp.

The return to Chanute Field was made on October 31st.

The results obtained surpassed all expectations, and it is felt that the class of armorers who were graduated the day of our return can justly step into any squadron armament unit with the feeling that they are as well, or even better, qualified to carry out their duties than the average squadron armorer with far more experience.

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Air freight service utilizing special planes equipped as "flying box cars" was inaugurated during October by Transcontinental & Western on its line. Multi-motored all-metal airplanes with a payload capacity of 3,500 pounds, are being used to start this innovation in transportation. First operations are being conducted on the TWA line between New York and Chicago, with intermediate stops at Philadelphia and Pittsburgh, Pa.

The CATERPILLAR CLUB

Since the compilation of the mythical Caterpillar Club as of June 30, 1936, when 803 names were entered on the Register and a total of 841 emergency jumps, of which 38 were repeaters, 24 new candidates presented themselves for initiation into this make-believe select fraternity, thereby increasing the number of lives saved in this country through the medium of the parachute to 827, and the total number of forced parachute jumps, as of October 27, 1936, to 865, repeater jumps included.

Those who have become affiliated with the Mystic Order of Caterpillars since June 30, 1936, are listed below, as follows:

No.	Date 1936		Name	Rank	Place of Jump
804	June	19	Edward N. Backus	2nd Lieut. Air Reserve	Near Barksdale Field, La.
805	June	30	John W. Komdat	Private, Air Corps	Bocas del Toro, Panama
806	June	30	Isaac W. Ott	1st Lieut., Air Corps	Bocas del Toro, Panama
807	July	22	C. O. Robson	Civilian, Air Corps	Dunreith, Indiana
808	July	22	John Cutting	Civilian, Air Corps	Dunreith, Indiana
809	July	22	William Cummings	Civilian, Air Corps	Dunreith, Indiana
810	July	22	John Wetherford	Civilian, Air Corps	Dunreith, Indiana
811	July	22	H. D. McDaniels	Civilian, Air Corps	Dunreith, Indiana
812	July	25	Mervin S. Cranfill	Private, Air Corps	Denbigh, Va.
813	July	25	Lloyd Eyre	Flying Cadet, Air Corps	Denbigh, Va.
814	July	28	Robert C. Wood	Flying Cadet, Air Corps	Kirby, Texas
815	July	29	Howard H. Pavlat	A.C.M.M., N.A.P., U.S.Navy	San Diego Bay, Calif.
816	August	6	Herbert B. Thatcher	1st Lieut., Air Corps	Near Kelly Field, Texas.
817	August	6	Joseph F. Majewski	Sergeant, Air Corps	Near Yoakum, Texas
818	August	6	Walter Miller	Major, Air Corps	Luling, Texas
819	August	13	Norbert D. Flinn	Private, Air Corps	New Kent, Va.
820	August	20	Edward F. Kayser	Private, Air Corps	Mitchel Field, N.Y.
821	August	20	Michael F. Cycon	Private, Air Corps	Mitchel Field, N.Y.
822	August	25	Troy Keith	Flying Cadet, Air Corps	Near Kelly Field, Texas
823	September	4	Joe Jacobson	Civilian	Stafford, Kansas
824	October	5	Loren L. Straw	Private, Air Corps	Kopowsin, Wash.
825	October	6	Robert H. Proctor	Aviation Cadet, U.S. Navy	Pensacola, Fla.
826	October	23	F. W. Evans	A.M.M., 2d Class, U.S.N.R.	Philadelphia, Pa.
827	October	27	Charles W. O'Connor	Captain, Air Corps	West Alexandria, Ohio.

In going through his initiation, Lieut. Backus stood up in the cockpit and put his left leg over the left side of the airplane. Then lowering his head and facing the stabilizer, he pulled his right leg over the side as he rolled to the left, so that when he cleared the airplane he was lying horizontally with his face down and to the rear. His right hand was on the ripcord handle and his left hand extended toward the stabilizer. He did not touch the stabilizer with any part of his body, but rolled under it with ample clearance.

"It was my first jump, but I had the utmost confidence in the parachute," Lieut. Backus stated, "and when I had made up my mind to jump I did not hesitate a moment. The outstanding thouught I had in mind when I was leaving the airplane was to be sure and miss the stabilizer. As quick as the stabilizer disappeared from sight, I pulled the ripcord. I had expected to experience a definite interval between the time the cord was pulled and the time the chute opened, but instead the chute seemed to open almost immediately. As soon as it opened I looked to see where I was going, and found I was about to hit a tall Cypress tree. I gave one short pull so as to slip the chute and clear the tall tree, as well as a clump of smaller ones. By the time the parachute had filled up again, I was on the ground. I landed at the edge of the small clump of trees.

Lieut. Isaac W. Ott was piloting a bombing plane in Panama when he discovered that the left motor and trailing edge of the flaps of the left wing were on fire around the gas tanks. His passenger, Private John W. Komdat, 7th Observation Squadron, sitting in the rear cockpit, left the plane by stepping out, facing the plane. During the jump before the parachute opened, Private Komdat stated he felt as though the chute wasn't going to open, but after it opened he felt rather safe and was not frightened.

Lieut. Ott left the plane by climbing out on the wing, holding to handle and railing alongside fuselage back to trailing edge of wing. He then held on railing with left hand until he could get right hand on ripcord. When he let go he went off backwards.

"I was afraid at first parachute would not open,' Lieut. Ott stated, 'but after it opened I felt fine until I saw plane make complete 360 degree turn coming towards me and I was afraid it was going to straighten out and run into me, but it continued in a gliding turn and passed about 150 yards in front of me, and went into the water, exploding immediately."

Mr. C.O. Hobson, Instructor in Airplane Mechanics at the Air Corps Technical School at Chanute Field, Rantoul, Ill., was one of five civilians in the employ of the Air Corps who were passengers in an Army Transport plane which took off from Wright Field, Dayton, Ohio, for the purpose of a flight test. When about one mile west of Dunreith, Indiana, the right engine caught fire, apparently from a fuel leak in the vicinity of the carburetor. The cabin of the Transport filled with smoke, and the intensity of the fire increased.

"After approximately six minutes from the time the fire was first noticed," Mr. Hobson stated, "the pilot ordered the five observers, myself included, to jump.

"I was slightly nervous when I realized that a jump was necessary, but hesitated only long enough to locate the 'D' ring of the ripcord, and immediately followed Mr. Cutting, who left first. The chute opened almost instantly after I pulled the ripcord and all that I felt was a slight jerk. The chute oscillated badly on the way down and I was unable to stop it by pulling down on the shroud lines. I hit the ground with my feet up at the extreme end of one of these oscillations on my left side and hip. The chute dragged me approximately 10 feet before I got it under control. After landing I felt a pain in the lower part of my back and right knee. I felt a little dazed and had a shortness of breath."

The pilots of the Transport, Captain J.S. Griffith and Frank Irvin, remained with the plane after the observers had "bailed out", extinguished the blaze with the aid of a hand extinguisher and then flew back to Wright Field. The ship was not damaged. Messrs. Cutting, McDaniels and Cummings were from Wright Field, and Mr. Weatherford from the Middletown Air Depot, Pa.

The exciting experience of Flying Cadet Lloyd Eyre during his initiation into the Caterpillar Club was published in the News Letter of October 1st.

Flying Cadet Robert C. Wood was proceeding from Kelly Field to Randolph Field, where he was to join a flight in a night training mission to Barksdale Field. When in the vicinity of Kirby, Texas, a parachute flare ignited while still attached to the bomb rack on the airplane. Cadet Wood loosened his safety belt, ran fletner (stabilizing device) to the full tail heavy position; cut the switches; stepped out of the cockpit backwards, placing his right foot on the wing and, holding the ship level as well as possible with his right hand and holding on to the landing wires on the left side of the fuselage with his left hand, he placed his left foot in the door of the cockpit and pushed away from the airplane, turning at the same time so that he would be facing the tail of the ship.

Cadet Wood stated he had no idea as to what could have caused the flare to ignite. His only reaction while going through his initiation into the Caterpillar Club was chagrin over the loss of a good airplane.

During a test flight of a Battle Fleet plane, pilot Howard H. Pavlat found things a little too hot when a fire broke out. He jumped and landed in San Diego Bay. He received second degree burns as a result of his initiation.

Lieut. Herbert B. Thatcher, a student at the Advanced Flying School, Kelly Field, Texas, flying in a formation of Observation planes, found his controls jammed while in a steep dive, and he was unable to move either the stick or right rudder in any direction. He had some slight control with the left rudder. Cutting the throttle and winding the stabilizer back, he came out of the dive in about a twenty degree left bank. From that time on he controlled the airplane by adjusting the throttle and stabilizer. The left bank was constant. All his efforts to free the controls were in vain, but he managed to maintain his altitude of 5,000 feet for about an hour and fifteen minutes. Believing that the airplane could be landed if it could hold a power glide, he experimented with this idea. The airplane assumed many awkward positions and finally got into a climbing turn to the left from which he was unable to assume level flight. The airspeed indicator dropped off to 50 miles per hour and, fearing a spin which he could not control, he jumped.

"Immediately upon leaving the airplane, I experienced a sensation of falling rapidly," Lieut. Thatcher stated. After unbuckling his safety belt, he grasped the left side of the cockpit and jumped head first over the side. "The parachute opened immediately upon pulling the ripcord," he continued, "and left me swinging violently face downward. The risers were twisted around my arms, and until I twisted my arms free I was in extreme pain. During the remainder of the descent I swung from side to side and was unable to judge my rate of descent. I tried to face into the direction I was drifting but I sailed through a tree and landed very hard on my back."

Private Norbert D. Flinn, 96th Bombardment Squadron, was a passenger in a Bombardment plane during a night flight. The airplane was flying at about 5,000 feet over New Kent, Va., when both motors cut out. After losing about 1,000 feet altitude, the pilot ordered all the passengers to "bail out." Private Flinn picked up his report book which had the data of the flight and went back to the trap door. He pulled the emergency door release, but was forced to kick the trap door from its fastenings. "I dove through," he stated, "but my parachute lodged in the door. After some time, I managed to kick loose by pushing against the bottom of the fuselage. Knowing I was too near to the ground to allow time to clear the airplane, I pulled the rip cord and saw my parachute unfurl. I was jerked around as the parachute opened and hit the tree tops almost immediately, which broke the fall. I released my harness and ran to the crash of the airplane, but it was burning and the fire was so hot I couldn't get to any of the others. I then walked about two miles or more to a farm house and was taken to Providence Forge, Va., where I reported the accident to Langley Field, Va."

The pilot of the bombing plane, Lieut. Willis S. Marvin, Air Reserve, and the other two passengers, Privates John J. Mather and James E. Crittenden, Air Corps, apparently made no effort to jump.

Edward F. Kayser and Michael F. Cycon, Privates, Air Corps, were passengers in a Bombardment plane during a night flight from Mitchel Field, N.Y. Cycon was in the rear cockpit working the ground radio station at Mitchel Field. "Apparently the pilot was maneuvering for a landing," he stated. "We were at 1500 feet. The airplane entered a dense fog area or a cloud. I felt the airplane nose up into a steep climb and the engines popped and the airplane vibrated. I tried to contact the pilot on the interphone, but was unable to do so. We began to lose altitude. I motioned for Private Kayser to jump. He was already poised and went over head first. I waited until we reached 900 feet altitude, and as we were still in the fog cloud with no visibility, I jumped.

"Immediately after I left the airplane I lost all sense of direction. There was no visibility. I remained in the feet first position until the 'chute opened. I pulled the ripcord immediately after I cleared the airplane because of the low altitude. All movements seemed to be automatic. I had no nervous reactions after the jump."

Private Kayser stated that after the radio operator, Private Cycon, motioned him to jump, he climbed up on the edge of the rear cockpit and dove off the side head first. "I waited about eight seconds before I pulled the ripcord," he said. "All my reactions and movements seemed to be automatic. I remained in the head first position until the parachute opened. The chute opened at about an interval of three seconds from the time I pulled the ripcord. I could distinguish lights on the ground at about 300 feet altitude. I maneuvered the chute into an open field. I had no nervous reactions during or after the jump."

The pilot subsequently landed the airplane at Mitchel Field without mishap.

Flying Cadet Troy Keith, student at the Advanced Flying School, Kelly Field, Texas, was practicing acrobatics in a Pursuit plane at an altitude of about 6,500 feet. Placing the plane into a left spin to do a couple of turns, he reversed the controls to recover, but nothing happened. His efforts time after time to right the aircraft proved in vain and he finally decided to "bail out." After he released his safety belt, he had extreme difficulty in moving his body to get over the side of the ship. Finally, he managed to get one foot over the side of the ship and threw himself on the inside of the spin. He made a happy landing and suffered no ill effects or injury.

Hurled unconscious into space when his plane exploded in mid-air, Joe Jacobson, veteran speed flier competing in the Bendix transcontinental race, was snatched from death when he instinctively yanked the ripcord of his parachute. Jacobson took off before dawn from New York with the six other Bendix Race contestants. He refueled his Northrop Gamma low-wing monoplane at Kansas City shortly after 7:00 a.m., and took off immediately for his goal - Los Angeles.

His unexpected initiation into the Caterpillar Club occurred when he was in the vicinity of Stafford, Kansas. "I was traveling along at 5,000 feet and everything seemed okay," he said. "Suddenly there was a roar. The next thing I knew I was falling through the air. Instinctively I reached for the ripcord of my parachute and pulled it. It opened and I drifted down to the ground.

"I looked around and found the parts of the ship. The largest was a piece about one foot long from one of the wing tips. I had a few bad moments right after I pulled the cord, as I was in such a position that the 'chute opened around me. As I fell, however, it straightened out. I felt as if somebody had given me a crack on the head - some part of the plane either hit me or I struck my head on the cockpit as I was blown clear. The plane fell in flames. I felt pretty well shaken up when I hit the ground. The wreck of my ship was scattered over an area of half a mile. The foot-long piece of wing tip I found more than a quarter of a mile from the rest of the pieces. Then I made my way to a farmhouse."

Private, 1st Class, Loren L. Straw, Air Corps, 91st Observation Squadron, was literally "up a tree" for three hours following his initiation into the Order of the Mystic Knights of the Silken Canopy. He was a passenger in an Observation plane, piloted by Lieut. Boushey. While diving, both the ailerons left for parts unknown, and the pilot ordered his mechanic to jump.

Private Straw first pulled the rear cockpit sliding cover forward and then started to climb out of the seat. The ring around the seat at the top hampered him in getting out, as his parachute hung up on it. "Being a small person," he said, I finally succeeded in getting out. The wind blew off my helmet and goggles. I sat on the edge of the cockpit, threw my gloves away and grasped the ripcord in my right hand. I then rolled over the side of the airplane. The pilot informed me later that it took me 15 seconds to get out of the plane.

"After I cleared the plane, I tried to pull the ripcord up instead of out, but I couldn't, so I used both hands and it came out. Then I either hit my forehead with the ripcord or I was in the wrong position and the parachute went by my forehead when it was opening. I felt no sensation of falling and when the parachute opened there was only a slight jerk.

"I managed to turn around and see the plane headed north in level flight and I decided that the pilot, Lieut. Boushey, was going to try an land the airplane. The chute began to oscillate, swinging me from side to side. I tried to stop the oscillations by pulling on the shroud lines, but to no avail. The wind was blowing me along at a good speed. At about 2,000 feet I went through a cloud which had a peculiar odor, something like hydrogen peroxide. After I passed through the cloud the chute stopped oscillating, but as I came closer to the ground the oscillations started again, although not as great as before. I pulled on the shroud lines to see if I couldn't land in a clearing. This maneuver turned me a quarter of the way around and I decided not to try it again for fear that all the air would spill out of the chute. I noticed that there were two farmhouses near where I would land, so I felt much better. I soon landed in a tall fir tree. The landing did not give me any jolt. I surveyed the situation and found that I was about 100 feet from the ground and about 20 feet from the trunk of the tree. My chute was caught on the branches high above me and the shroud lines were again caught about ten feet above my head. This prevented me from swinging around and getting close to the tree trunk or to a branch that would support me. There was one branch directly below me which looked large enough to support my weight, but when I stepped on it it creaked, and then by bouncing up and down it broke off close to the trunk. I was then bothered by my heavy one-piece winter flying suit, as I was very warm. About this time two turkey buzzards appeared and started circling the tree I was in, and I wondered whether they would eventually get me.

"I then decided that I would need help to get down, so I hollered as loudly as I could and I heard the dogs barking over at the farmhouse, which was a very comforting sound. Then someone began to holler and I kept on hollering so they could locate me. While they were coming I decided to try and ease myself by getting out of the parachute, as the leg straps were cutting me, especially the one on the right leg. The shroud lines on my left side were rather loose. This shifted all the strain on the right ones which tightened up the leg strap because most of my weight was on that side. I finally succeeded in unhooking the left leg strap, but there was too much weight on my right. I then leaned back until I was upside down, and after three tries I hooked my left leg in the left riser and pulled myself up. By this maneuver I was able to get the strain off the right leg strap and unhooked it. I then swung my right leg into a swing made of the left riser. The parachute pack was then on my right side about level with my head. The men were at the foot of the tree by this time, and one of them stayed with me while the other went for help. He said it would take quite a while because they would have to get a high climber from Rainier or Yelm in order to get me down, as the lowest limb on the tree was 50 or 60 feet from the ground. While they were gone I had to keep moving in the seat because the strap cut my legs and made my right leg cramp. I kept up a conversation with the man on the ground, who was partially deaf. I had to shout as loudly as I could in order for him to hear. I had already asked the man who went for help to phone Fort Lewis and notify them that I was safe. He soon came back and said Fort Lewis wanted to know what had happened to the plane and where the Lieutenant was. I told him and he left to make another phone call. He had to drive four miles in order to reach a phone. Soon the high climber came and he started up the tree, cutting off the limbs until he got to where I was. He brought up a rope and looped it over a limb on the opposite side of the tree, made a bowline loop in it and threw it over to me. I slipped it over my legs, using it as a seat. The men on the ground pulled me up out of the parachute and I went over against the trunk of the tree. The men on the ground then let me down as far as the rope held out, then I helped the high climber let me down until I ran out of rope. The high climber let me down the rest of the way by taking an extra loop around the limb and snubbing me down. I touched ground just about three hours after I jumped from the plane.

"My legs were shaky and sore from sitting in such a cramped position. During the time I was being lowered from the tree the man came back from telephoning and said that the Lieutenant had landed safely at Fort Lewis. I was greatly relieved on hearing that. The high climber then went up the tree, cutting off about a dozen more limbs before the parachute would come down. We bundled the parachute up and started our trek for the farmhouse."

Aviation Cadet Robert H. Proctor, U.S. Navy, "bailed out" of a Navy F4B-2 plane at Pensacola, Fla., when it went into an outside spin. The parachute eased him down safely to mother earth.

Aviation Machinist Mate F.W. Evans, U.S. Naval Reserve, was a passenger in an FF-2 airplane of the U.S. Naval Reserve Air Base at Philadelphia, Pa. The pilot was executing various maneuvers, including a spin, when Evans' safety belt clasp became unlatched. In checking a spin abruptly, Evans was thrown clear of the plane from the rear seat. He came down safely with no injuries being sustained.

Captain Charles W. O'Connor rapped at the portals of the Caterpillar Club at a rather early hour on October 27th - 5:13 a.m., to be more specific. The Captain was making the daily early morning weather flight at Wright Field. He had climbed his BT-2B airplane to 12,000 feet and was flying at that altitude when his motor suddenly quit. Unable to start it up again, he reached 5,500 feet before he jumped. He landed at West Alexandria, a small town not far from Dayton, his airplane crashing about seven miles away. Thus another aviator has had occasion to greet the Air Corps parachute as man's best friend in time of trouble.

Just as this was being written, advice was received from the Navy Department that on the night of November 2nd, Aviation Cadet G.L. Pentz, U.S. Naval Reserve, had gone through the formality of being initiated into the Caterpillar Club, the Mystic Knights of the Silken Canopy, the Silk Sailors Fraternity, or what have you. Cadet Pentz, while engaging in night flying training, was confronted with the unhappy realization that his motor had quit functioning. He jumped when about 3 miles NE of Loxley, Ala., and escaped injury.

THE EARLY DAYS OF MILITARY AVIATION

THE FIRST ARMY OFFICER TO FLY SOLO.

EVER so often when the topic of discussion turns to the early days of Army aviation, there appears to be at least one question about which there is a disagreement, namely - "Who was the first officer of the Army to fly heavier-than-air craft?"

Not long ago, this question became the subject of correspondence, and the Chief of the Materiel Division, Wright Field, Brigadier General A.W. Robins, was requested to use his good offices in an endeavor to settle this point once and for all, in view of the fact that, being stationed at Dayton, the General was in easy touch with Mr. Orville Wright.

An appointment with Mr. Wright followed. The latter looked up all of his old records and finally extracted for General Robins several items from the publication "Aeronautics" for the month of December, 1909. These items are quoted hereinafter and show the record of flights made by Mr. Wilbur Wright when he was required under his contract with the United States Government to instruct two officers in the operation of the first airplane purchased from the Wright Brothers by the Government.

Mr. Wright stated that Lieutenant F.E. Humphreys, of the Engineers, and Lieutenant Frank Lahm of the Cavalry were the two officers turned over to his brother for instruction. He further stated that Lieutenant Foulois reported later on and received some instruction but did not complete his flying training during this time. It will be noted from the record quoted hereinafter that on October 26, 1909, Lieut. Humphreys first soloed for a period of three minutes and apparently immediately thereafter Lieut. Lahm soloed for a period of thirteen minutes.

Mr. Wright informed General Robins that this is a correct record. It was therefore interesting to note that the first solo flight made by any Army officer was credited to Lieutenant Humphreys, Corps of Engineers.

The items from the publication "Aeronautics" for December, 1909, are quoted, as follows:

"Seventy-one flights have been made to November 9 in the Government aeroplane at College Park, Md., during the course of the instruction of Lieut. F.P. Lahm, Capt. Chas DeF. Chandler, Lieut. F.E. Humphreys, Lieut. B.D. Foulois and Lieut. Sweet, beginning October 8 and ending November 5, when, in making a sudden landing due to engine misfiring, the skid and right wing of the aeroplane were damaged. Repairs are now being made.

'HUMPHREYS MAKES 61 MIN. ON FOURTH FLIGHT.

'Lieut. Humphreys' flights might be taken to show the progress of an aviator. Beginning with one of 3 min. alone, he made one of 8½ min., 24 min., and then he took up Lieut. Foulois for 61 min. and 18 min. respectively. Lieut. Lahm comes next in point of length, making one alone of 58½ min. These two long flights were the longest made during the above period.

"Following is a complete list of the flights

"NAME FIRST GIVEN IS THAT OF THE PILOT.

"Oct. 8.-- Wright alone, 3 min.; Wright alone, 4 min. 51 sec.; Wright alone, 3 min.; Wright and Lahm, 5 min. 8 sec.; Wright and Humphreys, 4 min. 15 sec.

"Oct. 9.-- Wright alone, 6 min. 33 sec.; Wright alone, 3 min. 23 sec.; Wright alone, 1 min. 6 sec.

"Oct. 11.-- Wright alone, 3 min. 50 sec.

"Oct. 12.-- Wright and Humphreys, 7 min. 20 sec.

"Oct. 15.-- Wright and Lahm, 4 min. 48 sec.; Wright and Humphreys, 1 min. 32 sec.; Wright alone, 9 min.; Wright and Lahm, 14½ min.; Wright and Humphreys, 3½ min.

"Oct. 16.-- Wright and Humphreys, 13 min., 18 sec.; Wright and Lahm, 13 min. 44-1/5 sec.; Wright alone, 3 min. 34-4/5 sec.

"Oct. 18.-- Wright and Humphreys, 11 min. 47-2/5 sec.; Wright and Lahm, 18 min. 37-2/5 sec.; Wright and Humphreys, 10 min. 13-3/5 sec.; Wright and Lahm, 11 min. 34-2/5 sec.; Wright and Humphreys, 9 min. 37-1/5 sec.; Wright and Lahm, 9 min. 19-4/5 sec.

"Oct. 19.-- Wright and Humphreys, 11 min. 17 sec.; Wright and Lahm, 4 min. 10-2/5 sec.; Wright alone, 3 min. 15 sec.; Wright and Humphreys, 18 min. 40 sec.; Wright and Lahm, 19 min. 6 sec.

"Oct. 20.-- Wright and Humphreys, 3 min. 25 sec.; Wright and Lahm, 6 min. 28 sec.; Wright alone, 2 min. 31 sec.; Wright and Humphreys, 27 min.

"Oct. 21.-- Wright and Lahm, 33 min.; Wright and Humphreys, 1 min.; Wright alone, 2 min.

"Oct. 22.-- Wright alone, 3 min.; Wright and Humphreys, 42 min.

"Oct. 23.-- Wright and Lahm, 18 min.; Wright and Humphreys, 8 min.; Wright and Foulois, 13 min.; Wright and Lahm, 11 min.

"Oct. 25.-- Wright and Foulois, 13 min.; Wright and Humphreys, 11 min.; Wright and Lahm, 18 min.; Wright alone, 1½ min.

"Oct. 26.-- Humphreys alone, 3 min.; Lahm alone, 13 min.; Humphreys alone, 8½ min.; Wright alone, 2 min. 15 sec.; Lahm alone, 5 min.; Humphreys alone 24 min.; Lahm alone, 40 min.

"Oct. 27.-- Wright alone, 4 min.; Wright alone, 2 min.; Wright and Foulois, 28 min.; Wright and Chandler, passenger, 6½ min.; Lahm and Humphreys, 36 min.

"Oct. 29.-- Lahm and Humphreys, 1 min.

"Oct. 30.-- Foulois and Humphreys, 10 min.; Lahm and Humphreys, 14 min.; Foulois and Humphreys, 39 min.

"Nov. 1.-- Lahm alone, 16 min.; Lahm alone, 58½ min.; Wright alone, 2 min.

"Nov. 2.-- Wright alone, 2 min.; Wright and Lahm, 2 min.

"Nov. 3.-- Humphreys and Foulois, 61 min.; Lahm and Sweet, passenger, 9 min.; Humphreys and Foulois, 18 min.

"Nov. 5.-- Lahm and Humphreys, 9 min."

Lieut. Humphreys, now holding the rank of Colonel in the New York National Guard and commanding the 102nd Engineers, with station in

New York City, was born at Summit, N.J., September 16, 1883. He attended the Pennsylvania Military Academy from 1898 to 1902 and in that year received an appointment to the United States Military Academy, from which he graduated in 1906, and was commissioned second lieutenant, Corps of Engineers. From September 14, 1906, to November 27, 1906, he was with Company K, Engineers, at Camp of Instruction, Fort Riley, Kansas; from December 7, 1906, to February 2, 1907, at Fort Leavenworth, Kansas; en route to Cuba with Company I, Engineers, to February 10, 1907; at Camp Columbia, Cuba to (transferred to Company G, May 23, 1907; Battalion Adjutant, September 22, 1907, to January, 1908; with 2nd Battalion to September 22,1908) September 22, 1908; Student, Engineer School, Washington, D.C., September 28, 1908, to June 11, 1909. He was on detached service on duty pertaining to aeronautical work under the Chief Signal Officer from June 12 to October 31,1909. After serving from November 1, 1909, to May 30, 1910, with the 1st Battalion of Engineers, he resigned from the Army, because of business reasons, effective August 1, 1910.

Colonel Humphreys was in the Federal Service for duty on the Mexican Border from July 7, 1916, to January 4, 1917, being mustered in as Captain, 22nd Engineers, New York National Guard. He was promoted to the rank of Major on September 30, 1916.

Called into the Federal Service July 15,1917, as Major, 22nd Engineers, New York National Guard, which became the 102nd Engineers, he served with that organization at New York City to August, 1917, and at Camp Wadsworth, S.C., from September 2, 1917, to March, 1918.

On March 5, 1918, Colonel Humphreys reported for duty at the Aviation School at Rockwell Field, Coronado, Calif. He was announced as on duty requiring him to participate regularly and frequently in aerial flights from March 7, 1918.

Relieved from duty at the Aviation School on May 23, 1918, he proceeded to Cambridge, Mass., where he attended the School of Military Aeronautics until January 22, 1919, when he was assigned to duty with the Technical Section, Engineering Division, McCook Field, Dayton, Ohio. He served at that station until February 20, 1919, when he was honorably discharged from the Army.

He received an appointment as Colonel, Engineer Reserve, to rank from December 18, 1923,

On April 13, 1920, Colonel Humphreys received an appointment as Lieut. Colonel, 22nd New York Engineers, and on October 28th of that year he was advanced to the rank of Colonel.

In civil life Colonel Humphreys has been connected with the Humphreys Homeo Medicine Company, in which organization he has held the post of Treasurer and Assistant Secretary.

During the World War, Colonel Humphreys received the rating of Junior Military Aviator, to date from May 23, 1918.

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EARLY DAYS OF MILITARY AVIATION

Among the records of College Park, Md., for the year 1912, were found reports on flights made by the former Chief of the Air Corps, Major General Benjamin D. Foulois, then 1st Lieutenant, 7th Infantry.

On April 20, 1912, General Foulois made two flights in a Burgess-Wright airplane, the first for a duration of 16 minutes and the second, 18 minutes.

On June 5th, taking the air on a pilot's license test, he made three flights in a Wright airplane, the first for three minutes and the second and third for ten minutes each.

On June 8th, flying a Burgess-Wright, he was up for nine minutes, and on June 11th, he flew a Wright plane for 47 minutes.

On July 11th, he made a 7-minute flight in a Wright plane, and on July 13th, one flight for 8 minutes and one for 18 minutes, being accompanied on the sedond flight by Lieut. Rockwell.

Making cross-country wireless tests, and piloting a Wright plane, he flew for 17 minutes on July 27th and 16 minutes on July 29th.

On August 1st, flying a Wright plane, he was up for 8 minutes, and on the following day, flying a Burgess-Wright plane, and accompanied by Lieut. Harry Graham, he made a 32-minute flight for the purpose of taking photographs.

Making wireless tests on August 3rd, and flying a Wright plane, he made three flights, the first one for 4 minutes, when he was accompanied by Mr. Cram, of the Signal Corps; and the second and third for 10 and 26 minutes, respectively.

Engaged in cross-country wireless tests on August 5th, 6th and 7th, and piloting a Wright airplane, he flew for 12 minutes the first day; for 50 minutes to Laurel, Md., the second day, and for 7 minutes the third day.

The Signal Corps established the first Army Aviation School at College Park, Md., in June, 1911. The field was rented by the Quartermaster Corps, and temporary buildings were constructed for housing the airplanes. During the fiscal year ending June 30, 1912, 1500 flights were made by officer aviators. This number does not include the hops across the field by beginners. During the winter of 1911-1912, the personnel and airplanes were moved from College Park to Augusta, Ga., in order to have a milder climate for instructing students.

From June, 1912, until November of that year, the Signal Corps continued its practice and experimental work at College Park, Md. There were concentrated at College Park all the airplanes and aviation materiel in the possession of the Army, with the exception of two hangars and one airplane at San Antonio, Texas, and one hangar at Fort Leavenworth, Kansas. On November 1, 1912, there were 8 hangars at College Park, 12 airplanes, a detachment of 12 officers on aviation duty and 39 enlisted men. The machines included the Curtiss and Wright types. The instruction given on these types included both the preliminary work necessary for beginners to obtain the F.A.I. preliminary license, also the necessary training of the higher order to obtain the rating of "Military Aviater." During the period July 1 to October 1, the main work done was that of instruction. In addition to this, time was found to experiment with an automatic gun, photography and radio, and to take part in the maneuvers near Bridgeport, Conn.

Biographies

COLONEL JACOB W.S. WUEST, AIR CORPS

Colonel Jacob W.S. Wuest, Air Corps, now commanding the Rockwell Air Depot at Coronado, Calif., was born in Cincinnati, Ohio, January 24, 1880. He attended the public schools in that city and the U.S. Military Academy, West Point, N.Y. Following his graduation from the Military Academy, June 11, 1903, he was commissioned a second lieutenant of Infantry. Hewas promoted to 1st Lieutenant, August 7, 1909; to Captain, July 1, 1916; to Major, July 1, 1920; to Lieutenant Colonel, May 8, 1927, and to Colonel, October 1, 1934.

Colonel Wuest served with the 30th Infantry from October 29, 1903, to January 10, 1910, being at various times stationed in the Philippines, at Fort Crook, Neb.; and Fort Riley, Kansas. During part of the time he was stationed at Fort Crook he was on detached service in connection with a progressive military map in Nebraska, and likewise, while stationed in the Philippines, he was on detached service for over a year in connection with a topographical survey of these islands.

With the 25th Infantry, Colonel Wuest served at Fort George Wright, Wash., as battalion adjutant to April 28, 1910, when he was again assigned to the 30th Infantry, with which organization he served as Assistant Adjutant and Acting Adjutant, Presidio of San Francisco, Calif., to February 15, 1912; (on border duty in Southern California, April to July, 1911). He was Professor of Military Science and Tactics, Kentucky Military Institute, February 15 to December 15, 1912. On the following day he was assigned to the 28th Infantry, and he joined this regiment at Fort Snelling, Minn., February 15, 1913. From February 23, 1913, to April, 1914, he was on border duty at Galveston, Texas; with the American Expeditionary Forces at Vera Cruz, Mexico, April 23 to November 26, 1914. Returning August 15, 1915, to his former duty as Professor of Military Science and Tactics at the Kentucky Military Institute, he remained on this duty until May 30, 1917, when he was assigned as instructor at the Plattsburg Training Camp. From June 1, 1917, to December 5, 1917, he was instructor at the Officers' Training Camp at Fort Sheridan, Ill., and, following his detail to the Aviation Section, Signal Corps, he was on duty at Kelly Field, Texas, and in the Office of the Chief Signal Officer, Washington, December 15 to 29, 1917. From the latter date to May 1, 1918, he commanded the 4th Provisional Regiment, Aviation Section, Signal Corps, at Waco, Texas.

Following duty as student at the Army Balloon School at Fort Omaha, Nebraska, May 20 to August 9, 1918, and at the School for Aerial Observers, Fort Sill, Okla., to September 21, 1918, he returned to Fort Omaha and commanded the post and the Balloon School to August 28, 1920. He was a participant in the Army and Navy Balloon Race at St. Louis, Mo., September 25-27, 1919.

Following his graduation from the Army School of the Line, Fort Leavenworth, Kansas, in 1921; from the General Service Schools, Fort Leavenworth, Kansas, in 1922, and from the Army War College, Washington, D.C., in 1923, Colonel Wuest was detailed as a member of the General Staff, and assigned to duty in Panama as Assistant Chief of Staff, G-2 and G-3, Panama Canal Division. He served in Panama from January, 1924, to June, 1927, when he was transferred to Scott Field, Belleville, Ill., where for one year he pursued the course of instruction at the Balloon and Airship School. His graduation on June 29, 1928, was followed by his assignment to Langley Field, Va.

During the course of his two years' service at Langley Field, Colonel Wuest was for the greater part of this time Commanding Officer of Langley Field and the 2nd Wing, and Acting Commandant of the Air Corps Tactical School. From July 2, 1930, to May 18, 1931, he was in command of Chanute Field, Rantoul, Ill., and the Air Corps Technical School at that station. He was then assigned to duty as Assistant Military Attache for Air to Germany, Switzerland, Czechoslovakia, Austria, The Netherlands, Denmark and Sweden.

Colonel Wuest assumed his present duty as Commanding Officer of the Rockwell Air Depot on September 7, 1935.

He holds the two lighter-than-air ratings of "Airship Pilot" and "Balloon Observer".

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COLONEL LAWRENCE S. CHURCHILL, AIR CORPS

Colonel Lawrence S. Churchill, Air Corps, at present commanding the Middletown Air Depot, Middletown, Pa., was born at Ogdensburg, New York, June 10, 1890. For three years he attended Union College at Schenectady, N.Y., where he took a course in electrical engineering.

On June 3, 1912, he accepted a commission as 2nd Lieutenant of Infantry, and he served with the 7th Infantry until August, 1916, when he was detailed to the Aviation Section, Signal Corps, for flying training. He attended the Signal Corps Aviation School at San Diego, Calif., September 1, 1916, to May 16, 1917, and received the rating of Junior Military Aviator from May 3, 1917. Between May 13 and June 15, 1917, Col. Churchill was on duty for 8 days with the 1st Aero Squadron at Columbus, New Mexico, and then at Kelly Field, Texas. Placed in command of the 29th Provisional Aero Squadron, he sailed with this organization for overseas duty, and was stationed at Issoudun, France, until October 29, 1917. While at this station he also commanded the 3rd Aviation Instruction Detachment, A.E.F. From November 6, 1917, to January 6, 1918, he was on duty with the Materiel Department, Air Service, Zone of Advance; and from January 7 to March 13, 1918, he was stationed in Paris and on duty at several French airplane and motor factories.

Following duty at Headquarters, Advance Section, Zone of Advance, A.E.F., March 14 to June 14, 1918, he attended the General Staff College, A.E.F., for two and one-half months and then joined, on September 1st, the 1st Observation Group, Air Service, 1st Army. From September 19 to October 24, 1918, he was on duty in the office of the Assistant Chief of Air Service, Colombey-les-Belles, in charge of organization and training, following which he served with the Night Bombardment Section, Air Service, A.E.F., to November 26, 1918.

From November 27, 1918, to May 6, 1919, Colonel Churchill was Corps Air Service Commander, 8th Army Corps, A.E.F., and he then returned to the United States, where his first duty assignment was as Supply and Disbursing Officer at the Aviation Repair Depot, Love Field, Dallas, Texas, to November 1, 1919. Thereafter and until May 8, 1923, he was stationed at Americus, Ga., being for the greatest part of this time in command of the Aviation General Supply Depot and Souther Field.

For over two years (May 16, 1923 to August 17, 1925), Colonel Churchill was Air Officer of the 7th Corps Area at Omaha, Nebraska, and was then transferred to Langley Field, Va., where he was stationed until August 19, 1932. Among the duties he performed at Langley Field were those of Executive Officer, Assistant to the Commanding Officer, Post Adjutant and Planning Officer, Commanding Officer of the post and 2nd Wing, and commanding officer of the 2nd Bombardment Group.

From August 20, 1932, to June 26, 1933, Colonel Churchill attended the Army Industrial College, Washington, D.C., and, following his graduation, he was assigned to his present duty as Commanding Officer of the Middletown, Pa., Air Depot.

While stationed at Langley Field, he was on detached service for several months in the early part of 1930 at Edgewood Arsenal, Md., where he completed the course at the Chemical Warfare School. In that year, also in 1927, he was Executive Officer of the Machine Gun and Bombing Matches which were held at Langley Field, Va.

KELLY FIELD "MERCY" PLANE TRANSFERRED

The ambulance airplane (a C-24) which has been assigned to Kelly Field, Texas, since 1932, has been transferred to Brooks Field, Texas. This is the first time since the year 1924 that Kelly Field has not been responsible for the "Mercy" trips within the Corps Area. Kelly Field was the first Air Corps station to which an airplane ambulance was assigned. This first aerial ambulance was a Cox-Klemin make, and considerable nation-wide publicity was drawn to its many "Mercy" flights, the most notable of which were those made to Rock Springs in 1928 in order to bring many of the storm victims to San Antonio.

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HEAVY STORM CAUSES MANY FORCED LANDINGS

Major Robert D. Knapp, Director of Flying Training at the Air Corps Advanced Flying School, Kelly Field, Texas, was forced to use flares to effect a landing at Barksdale Field, La., recently while on a navigation flight from Maxwell Field. Flare dropping was necessitated when the lighting system at Barksdale Field was disrupted by the heavy storm which raged throughout the south on that night.

According to newspaper accounts, there were numerous forced landings on the same day and night all throughout the South.

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AERIAL PHOTOGRAPHS OF CONCHOS DAM

First Lieut. Charles F. Densford, Air Corps, Commanding Officer of the First Photo Section, Kelly Field, Texas, accompanied by Staff Sergeant Herman L. Chestnutt as photographer, proceeded in an O-25 Observation plane, under orders from the War Department, to northern New Mexico, where they were to report to the District Engineer in charge of the construction of the Conchos Dam on the North Canadian River, for the purpose of making aerial photographs of the progress of the Dam, also of the terrain in that vicinity.

Approximately eight square miles were covered by 43 vertical photographs, using the K-3B type camera. These were laid in 5-strips and 1-mosaic scale of 1:3000. Sixty-two oblique photographs also were taken.

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NAVY AERONAUTICS CHIEF VISITS KELLY FIELD

Admiral Arthur B. Cook, Chief of the Bureau of Aeronautics, Navy Department, Washington, D.C., was a recent visitor at Kelly Field, Texas, after first paying Randolph Field a visit. He was accompanied by three Naval officers. The visitors were flying in a Lockheed Electra.

Retirements

Major James A. Healy, Air Corps, one of the few remaining World War "Aces" actively connected with the Army Air Corps, was retired at the Station Hospital at Fort Sam Houston, Texas, on October 31, 1936. He has been under treatment at the hospital since June 20, 1936.

Major Healy was born March 26, 1893, at Fort Leavenworth, Kansas. He graduated from St. Peters College, Jersey City, N.J., and took a one-year course in law at Fordham University. He began his aviation career during the World War, enlisting August 23, 1917, at Essington, Pa., in the Aviation Section, Signal Reserve Corps. He received his ground school training at the University of Toronto, graduating November 7, 1917, and his flying training at Taliaferro Field, Fort Worth, Texas. Qualifying as a Reserve Military Aviator, he was commissioned a second lieutenant, Aviation Section, Signal Corps, January 15, 1918, and assigned to active duty with the 147th Aero Squadron at Taliaferro Field, where he served in the capacity of flying instructor. A month later he was sent to duty overseas, and completed an advanced course of flying training at the Third Aviation Instruction Center at Issoudun, France.

On April 5, 1918, Major Healy rejoined the 147th Aero Squadron and departed for the Toul front. He operated on the Toul sector until June 20, 1918, his work consisting of offensive and defensive patrols, shooting down enemy balloons, "straffing" troops and truck trains on the roads and "shooting up" trenches. The next scene of his operations was Touquin on the Marne, and he patrolled the Chateau Thierry sector, at which place he had as opponents Baron Von Richtofen's "Circus", the best of the German airmen, many of whom were "Aces." He engaged in many combats and, although outnumbered on most occasions, he destroyed approximately 12 enemy aircraft, five of which were officially confirmed, thus entitling him to the unofficial designation of "Ace."

Awarded the Distinguished Service Cross for extraordinary heroism in action near Grandpre, France, October 30, 1918, the act which merited this award to Major Healy was described by the late Major James A. Meissner, commanding the 147th Aero Squadron, as follows:

'Fearless persistency is Lieut. Healy's most prominent characteristic. He demonstrated this conclusively on October 30th, when he continued to patrol the Brieulles-Grandpre Sector alone after he had become separated from his comrades. While flying at 600 meters about four kilometers north of Grandpre, Lieut. Healy discovered an enemy plane, type Halberstadt, 200 meters above him, hiding in the sun. The Spad maneuvered for position as it climbed to attack and soon outgeneraled the German. He reached a point above and behind the Halberstadt, a most dangerous position, but one that offers the best shot to the pilot bold enough to approach from that angle. He dove at the observer, firing one burst into his cockpit that sent the Halberstadt to the ground in a steep dive. As he finished this engagement, Lieut. Healy looked up just in time to see two enemy planes, type Fokker, peaking on him. He quickly pulled his machine into a steep bank, dodged and maneuvered with great agility and dexterity. The Fokkers had tried to bag him between them, using the Halberstadt as a decoy, but Lieut. Healy proved more than a match for all three of the enemy and, although his gasoline was getting low, he stuck to the fight until he picked a vulnerable angle on one Fokker and fired several bursts into the machine that sent it crashing to the ground at Grandpre. Having completely defeated the trio, Lieut. Healy returned to our side of the lines without a drop of gasoline in his tank. Both planes are officially confirmed."

In addition to the above mentioned decoration, Major Healy received the Croix de Guerre from the French Government for extraordinary heroism in action on July 2, 1918, and one palm leaf for another feat of heroism on the same day. He was cited by the French for the Ordre de L'Armee when, on July 24, 1918, with four airplanes, he attacked eight enemy planes, and after a hard fight brought down one of his adversaries. Another French decoration he holds is Knight of the Legion of Honor.

Returning to the United States in February, 1919, Major Healy was on duty for a brief period at the Air Service Depot at Garden City, Long Island, N.Y. Transferred to the Office of the Director of Air Service, Washington, D.C., he was on duty in the Personnel Section March to July, 1919, and in the Information Division to April 21, 1921. Becoming interested in lighter-than-air work, his application to undergo training in this branch of aviation was approved, and he was sent to the Balloon School at Ross Field, Arcadia, Calif. He was rated a Balloon Observer on November 22, 1921. He then pursued the course of instruction at the Balloon and Airship School at Scott Field, Belleville, Ill., graduating in February, 1924, and receiving the rating of Airship Pilot. He continued on duty at Scott Field as Flying Instructor, in addition to several other assignments, until February 7, 1927. During the summer of 1924, he was on temporary duty at Fort Bragg, N.C., commanding a detachment of the 19th Airship Company engaged in regulating artillery fire during the period of a training camp. He commanded the 8th Airship Company during September, 1924, and served as Engineering Officer of this organization until September, 1925, when he was assigned as Assistant to the Officer in Charge of the Air Intermediate Depot, Scott Field. He also served as Inspector of the Depot.

During the National Balloon Race at Little Rock, Ark., in April, 1926, Major Healy performed very creditable work as Operations Officer for the Army Air Corps teams participating in this competition. Shortly thereafter he served as Operations Officer for the Army team sent to Belgium to participate in the Gordon-Bennett International Balloon Race.

Reporting for duty at Kelly Field, Texas, in February, 1927, Major Healy was assigned to the

42nd School Squadron. In April and May, 1927, he was Assistant Engineering Officer. In June and July he commanded the 99th Observation Squadron; in August, the 39th School Squadron, and from September, 1927, to March, 1930, the 42nd School Squadron, in addition to various other duties, among them that of defense counsel on general and special courts martial.

Transferred to France Field, Panama Canal Zone, in March, 1930, Major Healy was assigned to the 7th Observation Squadron and performed various duties therewith until November, 1930, when he was assigned to the 25th Bombardment Squadron, which he commanded to April 10, 1931. On duty at Brooks Field as Inspector of airplanes to October 20, 1931, he returned to Kelly Field and resumed his former duty of commanding officer of the 42nd School Squadron.

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AIR CORPS LOSES VETERAN NONCOMMISSIONED OFFICERS

The recent death of Master Sergeants Harry E. Turner (Kelly Field) and Carl W. Bradbury (Barksdale Field); the retirement of Master Sergeants Oscar Young (Chanute Field) and Technical Sergeant Edward Hudson, (Langley Field), and the discharge for disability of Master Sergeant Hans E. Busch, of March Field, resulted in a number of changes in the noncommissioned ranks of the Air Corps.

Promotions to the grade of Master Sergeant were given to Technical Sergeants Gust A. Tayloe, Mitchel Field; Lidias H. Albee, Langley Field; William H. Udell, March Field; Joseph L. Myers and 1st Sergeant Lee R. Weber, Panama Canal Department.

Staff Sergeants promoted to Technical Sergeant were Horace R. Ackerly, Panama Canal Department; William R. Taylor, Barksdale Field; Fred A. Roberts, Bolling Field; Peyton E. Hutchens, Langley Field; Arvel McFadden, Fort Sam Houston, Texas; Victor Berend and John L. Davis, Randolph Field.

Master Sergeant Christopher Murphy, of Mitchel Field, is slated to retire on November 30th, next.

Master Sergeant Turner was born August 22, 1897, at Lyon Mountain, New York. He originally enlisted in the Field Artillery on February 8, 1904, and served with this branch of the service until June 16, 1914. The remaining years of his enlisted service were with the Air Corps. During the World War, when he was appointed Master Electrician, he served overseas with the 161st and 1101st Aero Squadrons and the 2nd and 8th Balloon Companies. He was promoted to Master Sergeant in 1920, and he served at Brooks Field, in Hawaii and the Philippines, at Fort Bliss, Texas, and at Kelly Field, Texas. His last assignment was as line chief, 42nd School Squadron, Kelly Field.

Master Sergeant Bradbury was born at Watkinsville, Ga., August 26, 1892. His first enlistment, January 15, 1912 to January 14, 1915, was with the Infantry, and thereafter he served continuously with the Air Corps. He was with the 30th Balloon Company for one year as a Staff Sergeant; with the 43rd School Squadron as Master Sergeant for 4½ years; in the Hawaiian Department; at Bolling Field, D.C.; and with the 3rd Attack Group at Fort Crockett, Galveston, Texas, and later at Barksdale Field to which the Group subsequently moved. He completed the aerial photographic course at the Air Corps Technical School, Chanute Field, Ill., in 1931. Sergeant Bradbury was a member of the 1st Aero Squadron during the World War, and he served with this organization overseas.

Master Sergeant Young entered the military service in the 88th Coast Artillery, July 8, 1905, and since that time has served six years in the Coast Artillery and three years in the Infantry. The remainder of his service has been in the Air Service, Signal Corps and the Air Corps.

From June, 1917, to March, 1921, Sergeant Young, better known as "Cy," served as a pilot and instructor in flying when the airplane was yet a crude vehicle of the skies. In 1917, while at Mitchel Field, he built his own ship from salvaged parts of other planes. In a test "hop" made in November of that year, everything went off in clock-like precision. Control was easy and not strained, and maneuverability favorable. Later, in 1919 and again in 1925, plans, photographs and data were forwarded to the Engineering and Test Divisions for consideration, but due to the photographic evidence seeming to show a marked similarity to the Jenny used at the time, it was deemed to be of little or no improvement over the type already in use. Sergeant Young was, however, highly commended for his interest and craftmanship. During that same period he was recommended for appointment as a commissioned officer.

In approximately seven years at the Air Corps Technical School at Chanute Field, Ill., he has acted in the capacity of instructor. Now, in his late forties and yet a comparatively young man, "Cy" retires to a quiet life to pursue his hobbies of hunting and fishing in Indiana.

Technical Sergeant Hudson, a native of New York City, was born August 10, 1883. He enlisted in the Infantry July 17, 1905, and served three enlistments in that branch of the service. Curiously enough, he served first with the 9th Infantry, then with the 22nd Infantry and 6th Infantry, and each time with Company C of these respective regiments.

During the World War he served as a 1st Lieutenant and, following his honorable discharge, he enlisted in Company E, 9th Infantry, and served therewith from March 6, 1920 to December 28, 1920, when he was discharged to accept an appointment as Warrant Officer. Discharged as a Warrant Officer, at his own request, June 3, 1922, he enlisted in the Air Service February 10, 1923, and served continuously with this branch of the service until his retirement. He was with the 42nd School Squadron for nine years, and from July 6, 1932, he served with the 40th Attack Squadron until May 1, 1936; with the 58th Service Squadron, the 1st Transport Squadron and with Base Headquarters and 1st Air Base Squadron until October 31, 1936, the date of his retirement.

While with the Air Corps, Sergeant Hudson was stationed at various times at Kelly Field, Texas; Fort Crockett, Texas; and Langley Field, Va.

Master Sergeant Busch, a native of Copenhagen, Denmark, was born February 19, 1879. After serving for three months with Company K, 3rd Infantry, Oregon National Guard, in the Federal service, he enlisted in the Signal Corps on February 1, 1917, and was discharged as a Master Sergeant, January 31, 1920. He reenlisted the following day in the same grade with the 90th Attack Squadron, and served over 10 years with this organization. He graduated from the Parachute Riggers' course at the Air Corps Technical School, Chanute Field, Ill.; served for approximately 9 months in Hawaii, in 1917; for two years in the Philippines (1932-1934) with the 66th Service Squadron at Nichols Field and later with the 3rd Pursuit Squadron at Clark Field; at Scott Field, Ill., for a month, and at March Field, Calif., for approximately 2½ years.

Master Sergeant Murphy, a native of Castlebar, Ireland, was born May 31, 1886. Enlisting in the Army, January 8, 1908, he served six years with Company C, 19th Infantry, and then affiliated himself with the aviation branch of the service. During the course of his duty with the Air Corps, he served at Kelly Field, Chanute Field, Panama Canal Department, Langley Field, Bolling Field, Hawaiian Department and Mitchel Field, N.Y. His appointment as Master Sergeant dates from July 1, 1920.

Staff Sergeant Delbert S. Lee, of the 61st School Squadron, Kelly Field, Texas, was retired from the Army on October 31, 1936, after completing 30 years of service with the Infantry and the Air Corps.

Sergeant Lee served with the Infantry until 1927, and since that time was stationed at Kelly Field. A dinner in his honor was served at the 61st Squadron mess, during the course of which he was presented a gold watch and chain.

Sergeant Lee participated in three major battles during the World War, and saw many minor engagements. He will remain in San Antonio until the Spring of 1937 and then return to Bowling Green, Ky., his home.

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GENERAL KILBOURNE INSPECTS SCOTT FIELD

Major General Charles E. Kilbourne, Commanding General of the 6th Corps Area, made a tactical inspection of Scott Field, Belleville, Ill., on the morning of November 5th. Flying aboard the TC-14 airship, piloted by Captain James C. Shively, Air Corps, General Kilbourne conducted tactical exercises which required the cooperation of the 15th Observation Squadron and troops from the garrison at Jefferson Barracks, Missouri.

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Captain Charles A. Horn, Air Corps, was appointed to the temporary rank of Major to rank from November 4, 1936.

WAR DEPT. ORDERS AFFECTING AIR CORPS OFFICERS

Changes of Station: To Office Chief of the Air Corps, Washington, D.C.: Major Norman D. Brophy, from duty as Instructor, Colorado National Guard, Denver, Colo.

To Chanute Field, Ill.: Captain Robert W.C. Wimsatt, from MiddletownAir Depot, Pa.

To March Field, Calif.: Major Samuel G. Frierson and 1st Lieut. Jack W. Wood, from the Hawaiian Department; Captain John S. Griffith, from Wright Field, Ohio.

To Pittsburgh, Pa., for duty with Organized Reserves, 3rd Corps Area: Major Harold D. Smith, from Hamilton Field, Calif.

To Air Corps Training Center, Randolph Field, Texas: 1st Lieuts. Daniel S. Campbell and Benjamin J. Webster, from Hawaiian Department; Frank P. Hunter, Jr., from Panama Canal Dept.

To Barksdale Field, La.: Major George H. Beverley, from Panama Canal Department; 1st Lieut. Waldine W. Messmore, from Hawaiian Department.

To Langley Field, Va.: 1st Lieuts. George E. Price, from Hawaiian Department; and Neil B. Harding from Panama Canal Department.

To Mitchel Field, N.Y.: 1st Lieut. Emery S. Wetzel, from Hawaiian Department.

To Panama Canal Department: 1st Lieuts. Kenneth B. Hobson, from March Field; Wm. M. Garland, from Hamilton Field; Truman H. Landon, Randolph Field; Elvin F. Maughan, Fort Lewis, Wash.; Captain Thurston H. Baxter, 1st Lieuts. Robert O. Cork and Kenneth R. Crosher, from Barksdale Field; 1st Lieuts. Trenholm J. Meyer, Randolph Field; James P. Newberry, Brooks Field; Kenneth A. Rogers, Kelly Field; Edgar A. Sirmyer, Langley Field.

To the Philippine Department: 1st Lieut. Leon R. Brownfield, from Scott Field, Ill.; Joseph A. Miller, Langley Field.

To the Hawaiian Department: Major Newman R. Laughinghouse, from Fort Riley, Kansas; 1st Lieuts. Merlin I. Carter, from Barksdale Field; Lawrence H. Douthit and Theodore B. Anderson, March Field; Donald R. Lyon, Wilbur Erickson and Richard C. Lindsay, from Hamilton Field; Leland S. Stranathan, George F. Kehoe and Archibald M. Kelley, Randolph Field; Donald W. Titus, from Fort Lewis, Wash.

To Randolph Field, Texas: 1st Lieut. Lawrence B. Kelley, from Panama Canal Department.

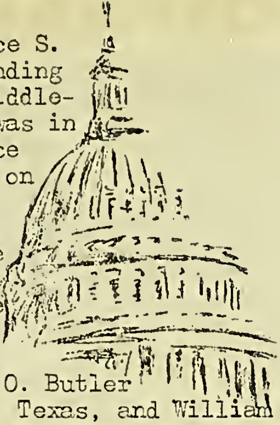
Private, 1st Class, S.L. Fahey, pilot with the 3rd Transport Squadron, San Antonio Air Depot, Duncan Field, Texas, since September 1, 1936, and formerly of Brooks Field, Texas, was transferred as a Private to Scott Field, Ill., and reported there for discharge and to be placed on extended active duty as 2nd Lieutenant, Air Reserve, at that station.

Chemical Warfare Drills at Hamilton Field

(Continued from Page 6).

and humorous remarks are heard, all realize its importance and take an active part in these drills.

WASHINGTON OFFICE NOTES



Colonel Lawrence S. Churchill, commanding officer of the Middletown Air Depot, was in the Chief's Office for a conference on October 29th.

Visitors to the Chief's Office during the course of the past two weeks were Lieut. Colonels William O. Butler from Kelly Field, Texas, and William B. Wright, Jr., Air Officer, 5th Corps Area, Columbus, O., while on extended navigation flights; 1st Lieut. Leon R. Brownfield, from Scott Field, during extended navigation flight; Major Arthur W. Brock, Jr., and Captain Thomas H. Chapman, from the Materiel Division, Wright Field, Ohio, for conference; and 2nd Lieut. James W. Totten, from Kelly Field, enroute to his new station, Langley Field, Va.

Lieut. Colonel Harvey S. Burwell and Lieut. Colonel Michael F. Davis departed on November 6th and 7th, respectively, on leave of absence.

Captain Haynie McCormick, of Scott Field, after several days on temporary duty in the Chief's Office, departed on leave of absence.

Officers returning to their desks after completing missions of ferrying planes eastward from the West Coast were Lieut. Colonel Ross G. Hoyt, Information Division; Major Rowland C.W. Blessley, Reserve Division, and Captain D.F. Stace, Supply Division.

Major Malcolm C. Grow, Chief Flight Surgeon, returned from leave of absence.

Major Morton H. McKinnon, Personnel Division, departed November 10th on a navigation flight to Fort Leavenworth, Kansas.

Major Lowell H. Smith, Chief of the Inspection Division, left November 10th for Wright Field, for conference.

Captain James W. Spry returned November 7th from an inspection trip.

Major William B. Souza ferried an C-46A plane to Mitchell Field.

Pan American Airways is reported to have secured permission to open an air transport service in the Panama Canal Zone between France Field on the Atlantic side and Albrook Field on the Pacific side. There has been no announcement regarding schedule or rates. It is expected that the service will be daily and that operations will start about December 15th.

"BOMBARDMENT" OF GREAT SALT LAKE

According to an announcement from Headquarters of the First Wing, GHQ Air Force, March Field, Calif., nine of the latest type Martin Bombers will swoop over a pyramidal target in the Great Salt Lake on November 14th in one of the most spectacular demonstrations of modern Army bombing technique ever seen in the far West.

Brigadier General Delos C. Emmons, wing commander, will assume that the Great Salt Lake is a great body of water, comparable to the Atlantic or Pacific, in which an enemy ship is headed toward the United States shore. He will order Lieut. Colonel Hubert R. Harmon, commander of the 19th Bombardment Group, to attack the ship and destroy it before it reaches the American coast. The general problem will be to conduct a long range bombing mission and to advance the operating base 125 miles to Bakersfield during the course of the flight. As the planes will fly the 600 miles to Salt Lake at a high altitude, oxygen equipment will be used.

The Great Salt Lake was chosen for this experiment in bombing practice for several reasons. Permission was obtained recently from Governor Henry H. Blood, of Utah, to use the Lake for this purpose. The distance, roughly 600 miles, is the approximate one at which Army airplanes would contact the fleet of an enemy air power, in either the Atlantic or Pacific, according to tactical experts. They base their opinions on the types of airplanes now used by the Army Air Corps.

As the flight to Salt Lake is all over land, little risk is involved, compared to that which would be encountered in a practice mission to sea for an equal distance. Possibly the most important reason is to familiarize combat crews with operating conditions in the eleven Western States covered by the Wing.

As one of the objects of the field exercise is to discover the effects of extreme cold and fatigue on bombing accuracy, the time involved, between three and four hours, is ideal for making this test.

While the nine speedy Martins are whirling through the skies with their crews of four men, including one pilot, one bomber, a radio operator and a gunner each, the ground forces of the 19th Bombardment Group, consisting of 40 officers and over 300 enlisted men, will entruck for Bakersfield. Their object will be to establish a bombardment operating base at the Municipal Airport while the mission is in progress.

When the nine bombers arrive at the tent like target, about thirty feet square and fifteen feet high, they will each drop one of the two 300-pound high explosive demolition bombs they will carry for the mission. As these bombs each make a crater over six feet deep and nearly twice as wide in the hard packed sand of Muroc Dry Lake, it is easy to imagine what terrific splashes these missles will create in the briny depths of the Great Salt Lake.

Wheeling away from the hapless target, the nine destroyers from the air will get comfortably out of range of the imaginary antiaircraft guns the equally pseudo enemy airship is carrying. Approaching the target again, they will repeat their salvo of nine 300-pounders. The combined load of the nine machines for the 600-mile non-stop mission will be 5400 pounds.

Construction of the target is under the supervision of Captain David Goodrich, the commanding officer of the Air Corps Detachment of the Municipal Airport, Salt Lake City. He has lent his assistance at every opportunity to the 19th Bombardment Group in its efforts to stage this field exercise.

The 36 flyers will land at the Municipal Airport, Salt Lake City, at the completion of the exercise, and will remain at the Utah city until Monday, November 16th, when they will return to the bombardment base prepared for them at the Bakersfield airport. The 19th Bombardment Group will leave the Kern County city on November 21st, for its home air base, March Field, at the completion of its annual field exercise.

Originally, the 19th had intended to occupy the Municipal Airport at Bakersfield from November 2nd until the 7th, but the present training program for First Wing units made that impossible. Therefore, the Bakersfield dates were advanced November 14th-21st.

Other bombing that will take place during the maneuver week will occur over the floor of Muroc Dry Lake.

Names of the individual organizations participating in the Bakersfield field exercises are the 19th Bombardment Group Headquarters Squadron, the 30th and 32nd Bombardment Squadrons, the 38th Reconnaissance Squadron and the 23rd Photographic Section. The total number of enlisted men will be over 300, while 60 officers will fly in the maneuvers. Only 18 officers and 18 enlisted men will fly to the Salt Lake bombing.

Group staff officers at Bakersfield will be Lieut. Colonel Harmon, commander; Major James L. Grisham, executive; Lieut. Wentworth Goss, operations and public relations officer; Lieut. Dolf Muhleisen, adjutant, and Lieut. Roger V. Williams, communications officer.

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There is a well known fleet air arm story of a young flying officer, R.A.F., who was pilot of an aircraft in which the observer was a Lieut. Commander, R.N. After carrying out a long distance reconnaissance over dreary wastes of water many miles from their base, the flying officer decided that it was time to go home, as petrol was running short. He intimated this to the observer, who disagreed. It appears that some argument developed over the matter, in which it is conceivable that personal abuse featured. The observer eventually threw his gold lace into the balance.

"I am the captain of this aircraft," he said (somewhat injudiciously). "I shall carry on for another half hour.

"Yes?" replied the pilot. "Well, you can do what you like with your half. I'm taking my half home. Which he did.

- The Fighting Forces.

Obituaries

The death on November 11th of 1st Lieutenant Walter A. Fenander, as the result of an airplane accident in the vicinity of Wheeler Field, Hawaii, removed from the ranks of the Air Corps a most promising young officer.

Lieut. Fenander, a native of San Francisco, Calif., was born February 3, 1907. After 8 years of grammar school and four years of high school, he attended the University of Nevada for one year and the University of Southern California for two years, specializing in Electrical Engineering.

Appointed a Flying Cadet in the Air Corps, he graduated from the Primary Flying School, March Field, Calif., June 28, 1928, and from the Advanced Flying School, Kelly Field, Texas, October 20, 1928. He was commissioned a 2nd Lieutenant in the Air Reserve and rated an "Airplane Pilot," effective October 30, 1928.

Successful in his examination for appointment in the Air Corps, Regular Army, he accepted a commission as 2nd Lieutenant, June 15, 1929, and was assigned to station at Crissy Field, Presidio of San Francisco, Calif., where he performed miscellaneous duties with the 91st Observation Squadron.

Lieut. Fenander completed the course in Aerial Photography at the Air Corps Technical School, Chanute Field, Rantoul, Ill., in July, 1931, following which he was assigned to duty at Scott Field, Belleville, Ill., as commanding officer of the 1st Photo Section.

During the operation of the air mail by the Army Air Corps in the winter of 1934, Lieut. Fenander flew the mail on the Washington - Greensboro - Atlanta route.

In March, 1935, Lieut. Fenander sailed for duty in the Hawaiian Department. Assigned as Supply Officer of the 75th Service Squadron, he held the temporary rank of Captain for about a year.

The sincere sympathy of the Air Corps is extended to the deceased officer's bereaved family.

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NEW CLASS STARTS TRAINING AT ADV. FLYING SCHOOL

Class No. 27-B started flying training at Kelly Field, Texas, October 19th. The students were transferred from the Primary Flying School on October 10th, and the following week was devoted to the many details necessary for the orientation of the newcomers.

The ground school program for the school has been reduced to 136 hours, the previous class having 150 hours. A change was also made in the flying training program. The present class will receive but 12 hours transition, whereas the last class was given 15 hours. Three hours, however, have been added to Instrument Flying, making a total of 21 hours. The previous class was given 18 hours.

Four instructors, 1st Lts. John H. Bundy, John H. Ives, Troup Miller and 2nd Lieut. Clarence M. Sartain, have been on temporary duty at the Air Corps Primary Flying School since October 21, 1936.

AIR CORPS NEWS LETTER

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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE UNITED STATES ARMY, A PIONEER OF PIONEERS
By 2nd Lieut. Ray W. Clifton, Air Corps

THE average layman thinks of the Army in the terms of being an organized body of men armed only for the purpose of war. The present day United States Army is a small, efficient, and effective mobile force which is available for emergencies within the continental limits of the United States, Alaska, Hawaii, the Philippines, Panama, Porto Rico and China. Although the primary purpose of all of the work of the Army is to provide for national defense, it has and does play a large part in the development of the nation. Due to its size and efficiency, it has been able to accomplish tasks which have been too large for ptivate enterprise.

When the Louisiana Purchase was made, very little was known of the land. Captain Meriwether Lewis and Lieutenant William Clark were sent with 4 sergeants, 23 privates, and some Indian guides on the "Lewis and Clark Expedition" to explore this new territory and to bring back the knowledge of its resources. The information obtained was of such great value to the pioneers that Congress rewarded all the men with grants of land and double pay.

Soldiers of the Army went along with the pioneers into this new territory, surveyed the land, blazed trails, built roads, and protected the settlers from the Indians.

Practically every boundary of the United States and most of the State boundaries were surveyed and marked by the Army engineers. They helped construct the Chesapeake and Ohio and the Erie Canals. Many of our lakes have been surveyed by them. Lighthouses were built by the engineers to aid navigation. They have always been active in flood prevention, in the improvement of rivers and harbors, and in the protection and preservation of navigable waters for which are spent a certain portion of the funds which are appropriated by Congress for the War Department.

The Army engineers have built many public buildings in Washington, D.C., such as the Washington Monument, the Library of Congress, the old Post Office Building, the Government Printing Office, the New Municipal Building, the War College, the wings and dome of the United States Capitol, and the old Agricultural Building. They supervised the construction of the Lincoln Memorial, and most of the park system of the District of Columbia.

Many of the early railroads, such as the Boston & Albany; New York, New Haven & Hartford; the Northern Central; the Baltimore and Ohio, and others were located, constructed and managed for a time by the Army engineers. Later, they assisted in building the transcontinental railroads. At the request of the Czar of Russia, an Army officer was sent to build a railroad from Petrograd to Moscow.

The Army stimulated the beginnings of the standardization of the manufacture of machinery and the use of interchangeable parts. The results are that nowadays one can get a new part for most any piece of machinery, of which the car is an example.

The tractor industry was greatly augmented by military experimentation in tanks and artillery tractors. So successful were they that tractors have been adopted by agriculture and other occupations.

The Weather Bureau was organized and operated for a time by the Army. The Bureau has recently developed a new method of forecasting weather. In order to accomplish this, airplanes are flown up to 17,000 feet every morning at designated stations throughout the United States for the purpose of carrying the weather instruments. The Air Corps is cooperating with the Weather Bureau by furnishing airplanes and personnel used at many of these stations.

The Lighthouse Service, which is an important aid to ocean traffic, was built up and operated by the Army before civil agencies took it over.

A very rapid expansion in the telegraph system of the nation occurred just after the Civil War, due largely to the work which was done by the Signal Corps during the war. Three thousand miles of telegraph lines were operated in the South by the Corps as late as 1877, which provided the framework for the systems now used in that section.

The Army has given aid in many disasters. It rendered aid in the Mississippi flood of 1912, and during the crisis of the flood of 1927 the Air Corps personnel carried, by air, food and medicine day and night. The chaotic conditions which occurred after the San Francisco earthquake of 1906 were brought to order. Then there were the Galveston flood of 1915 and other disasters in which the Army received gratitude and appreciation from the survivors.

The great forests in our national parks have received fire protection from the Army fliers who patrolled, by air, over 100,000 square miles of forest land in 1922.

The Chemical Warfare Service has solved the problem of effective and safe fumigation. The tear gas which is very useful in capturing barricaded criminals and in suppressing riots is another product of this service. It has produced a gas mask that is helpful in protecting miners against the noxious carbon-monoxide gas. The Service aided in the experiments which led to the dusting of crops by airplanes to exterminate the boll weevil and other insect pests. The department is searching continually for methods which will destroy various insects.

Steel products were first demanded and purchased by the Army. The Ordnance Department prescribed the use of nickel steel for army equipment, causing it to be recognized to such an extent that it is now in common use commercially.

Soldiers accompanied the gold seekers to the Alaskan Klondike. The peaceful atmosphere in this territory was due to the regulations which required all newcomers to deposit their firearms with the Army for safe-keeping. The soldiers not only policed but penetrated the wilderness, surveyed the land, projected railroads, and built roads. The Signal Corps established radio stations, built 600 miles of telegraph lines, and connected Alaska with the United States by laying an ocean cable.

The Army has given momentum to the forces of civilization in the Philippines, Hawaii, Cuba, Porto Rico and Panama by building public utilities, stamping out disease, educating the people, promoting the spiritual welfare and protecting them from aggression.

Through the efforts of the Medical Department, much constructive and lifesaving work has been done. The hookworm has been about eliminated. The number of deaths in Porto Rico has been decreased to such an extent that the efficiency of the workers has increased 60%. Much relief has been brought to our southern States also.

The discovery by the Medical Department that yellow fever is transmitted from man to man by the Stegomyia mosquito has resulted in the disease being practically eradicated from the Western Hemisphere. Beriberi, one of the most dreaded diseases in the Philippines, has been eliminated. Malaria has been brought under control.

Eliminating yellow fever and controlling malaria made possible the ultimate completion of the Panama Canal without a heavy death toll and under conditions of health similar to those in the United States.

The medical officers have battled other diseases with creditable results. Smallpox took over 7,000 lives during the Civil War, while it took only 14 during the World War. Malaria took 15,000 during the Civil War, while we lost only 25 during the World War from this cause. A research in the United States Army beginning right after the Spanish-American War in connection with vaccination against typhoid fever was successfully completed by medical officers. The results were that one-twentieth of one percent of the total suffered during the World War, as compared with 12% during the Spanish-American War, from this sickness.

At the beginning of the World War, there was no information available as to where materials could be found, who could manufacture them, and how much they would cost. Much confusion and waste followed in mobilizing the industries. Nowadays, Army officers and civilian experts are determining the location of industrial plants, their size, the kind of work they can do, and the price of their products. This mobilization of the industrial resources of the country during peace time is a great service to the nation and to the manufacturers and will result in the elimination of confusion and waste in the event of another war.

Pioneer work has been done by the Army in the educational field by making surveys of the physical, technical, and educational conditions of young men. During the World War it was found that 50% of those examined were physically subnormal; only one-third of the men who thought they possessed technical skill could be rated as journeymen, and nearly 25% were unable to read or write the English language.

The Army has been one of the early pioneers in the development of aviation. Army fliers made the first flight around the world, the first flight from the mainland to Hawaii, were first to fly across the continent in one day, and made the first non-stop flight from coast to coast. The outside loop was successfully accomplished for the first time by an Army officer.

"Blind Flying," which is so vital in the present day air transportation, was developed by the Air Corps. The first blind landing by instruments and without a safety pilot was successfully completed by an Army flier.

Sending messages from airplane to ground by radio originated in the Army. The birth of aerial photography occurred here also.

At the end of the World War, the Army had on hand an excess of "Jennies" and DH airplanes. A number of the military pilots who were discharged purchased the "Jennies" and took them on "barnstorming" tours throughout the nation. This created an interest in aviation, especially among the younger generation. Many DH airplanes were turned over to the Post Office Department to be used on the transcontinental air mail runs. Later, as air mail became more popular, it was deemed necessary to make mail runs at night. This required lighted air routes. The Army fliers helped blaze these routes.

Because it was necessary to carry out military missions at night during the World War, the aeronautical engineers of our Army developed airdrome and airplane lights.

The Air Corps experimental station at Wright Field, Dayton, Ohio, is continually creating new developments in aviation which tends to arouse interest in the profession to the highest degree and stimulate endeavors along similar lines.

From these timely events it can be seen that the United States Army is a pioneer of pioneers and one of the Nation's greatest assets. It takes this intimate part in the development of the nation not to gain admiration and profit for itself but for the common defense and welfare of the people which it serves.

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PURCHASE OF NEW OBSERVATION PLANES

The Secretary of War, Hon. Harry H. Woodring, recently announced the award of a contract to North American Aviation, Inc., Inglewood, Calif., amounting to $3,429,600 for the delivery of a large number of the new North American O-47 Corps and Army Observation airplanes to the Air Corps.

This is a three-place, mid-wing, single engine monoplane with retractable landing gear and tail wheel, and is powered with a Wright "Cyclone" engine developing approximately 850 horsepower. It is equipped with flaps to permit take-off and landing from small emergency airdromes, thereby enabling fast and modern combat airplanes to utilize the types of airdromes which are available to Observation type aircraft serving Corps and Army units.

The O-47 is designed and constructed to perform detailed reconnaissance of the area immediately behind the enemy's front lines and to maintain liaison between higher headquarters and our front line troops. Especial care has been taken to facilitate the work of the observer in securing information of ground activities and promptly transmitting it to the proper headquarters where, due to the promptness by which it has been secured and transmitted, full utilization of the information is possible.

The highly effective streamlining and the efficient utilization of space which characterizes this airplane, together constitute another example of the rapid advance in aeronautical design now being made by American aviation industry.

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SAVING TIME IN AIRPLANE OVERHAUL

In a recent press bulletin issued by the Bureau of Aeronautics, Navy Department, there appears an item relating to a new method employed in overhauling airplanes at the Naval Air Station at Pensacola, Fla., which is quoted below under the belief that it will be of interest to Air Corps personnel, viz:

"For some time in the past it has been the policy at this Station to give top minor overhauls to the fighting planes of Squadron Five. This reconditioning often calls for a coat of dope on wings and fuselage which makes necessary the removal of the wings from the fuselage and their subsequent replacement and realignment. In order to obviate the necessity for removing the wings, a cradle or 'rocking horse' was built out of a few odd pieces of pipe at very little expense. This cradle is somewhat similar to the chassis of a sled in which the runners are bent through 90 degrees at the forward end and then continued straight for a few feet. The plane is fastened securely to the cradle at the plane's gear fitting while it is in a horizontal position. The cradle is then rocked forward; the plane does the first quarter part of an outside loop and rests in a vertical dive position, the weight being borne on bolts which bear on the forward end of the longerons. It is then possible to dope the bottom side of the wings without removing them from the fuselage and, incidentally, it is very handy to work on the bottom side of the fuselage with the plane in a vertical position. The time saved on the first top minor overhaul using the new cradle more than paid for the cost of the material.

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"BAILING OUT"

Aviation slang is often confusing to the layman, as may be noted from the following item in the Navy Press Bulletin:

"One of the Navy Day visitors inquired about a cadet who had jumped in a parachute several days previously and wanted to know if he had been rescued from the water safely. On being told that the cadet had landed safely on dry land, the visitor observed

(Continued on page 5).

PHOTOGRAPHY AND HUNTING IN THE PHILIPPINE ISLANDS

By Capt. J.F. Phillips and Lieut. A.R. Maxwell

WHILE on a recent photographic and inspection trip in the Southern Islands, Captain J. F. Phillips, Lieut. Alfred R. Maxwell, Master Sergeant V.A. Merson and Staff Sergeant G.H. Goodrich, of Nichols Field, enjoyed, or rather survived, an interesting crocodile hunt. The hunt was arranged by Lieut. Santiago Novarro, Philippine Constabulary, stationed at Buluan, Cotabata Province, in the heart of Southern Mindanao. Lieut. Novarro has built a very good landing field and always extends an enthusiastic welcome to pilots flying through. Practically surrounded by a lake, a river, and the extensive Liguasan Marches, this is a crocodile country. Although several hundred thousand skins were shipped from Cotabato in the early thirties, there are many left.

For some weeks the two officers had been boning up on croc hunting and fixing up their rifles. They learned that crocs are caught in many ways - by spearing, harpooning, lassoing, or fishing with live monkeys or dogs as bait. Maxwell was converted to the spearing idea, but Phillips allowed as how he'd stick to his trusty B'ar gun. As it turned out, rifles were useless for hunting them in the water, and spearing them required an expertness in handling one's self in a narrow banca (dugout canoe).

The party started out after dark in three bancas, crewed by two Moros each. The idea was to wedge one's self in the bottom of the banca and hope it didn't capsize. The bow-paddler wore a battery or carbide flashlight on his head, miner fashion, and was equipped with a long bamboo spear with a detachable head secured to the handle with a length of rope. The hunt was conducted mostly among the lotus pads and grasses which line the shores of Lake Buluan for a depth of several hundred yards. The crocs were located only by their eyes, which were above the water and glowed redly in the ray of the flashlight. When an eye was sighted, the stern-paddler paddled quietly up to the croc while the spearman stood poised for action. The croc was supposed to be speared in the neck, dragged to the banca, and killed with an axe-blow on the head.

Unfortunately, although the hunt lasted until near dawn, all the big crocs were elsewhere, and with one exception all of the catches were made by hand. The Moro would drop his spear and neatly snatch the reptile out of the water by its neck. It looked simple. The Moro then lashed the dangerous mouth closed and tied the head to the tail. Altogether, about twenty crocs, ranging in length from one to three feet, were caught. Most of them were sent to Nichols Field alive and distributed. Several remarks were heard about "frog hunting."

The mosquitoes were another story. They appeared to be even larger than the crocs and certainly more numerous and dangerous. The hunters passed through many swarms as thick as rain, which hummed as loud as a frog-chorus. The hunt was a great experience but, remembering the mosquitoes and the cramped bancas, it is doubtful if any of the four will ever return for the "big ones that got away."

Photographic accomplishments on this flight consisted of exposing over 200 oblique negatives. Landing fields, towns and characteristically Philippine subjects in the order named were sought.

Aerial photography in the Philippines is very much a matter of opportunity, due to the habitual cloudiness and the fact that safety precautions require more than one plane to be in every flight over the jungles and water hops. This decreases the mobility which normally characterizes a photo mission. Very early morning is the time of least cloudiness in the interior of the Islands, while along the coast line on-shore winds are the prayer of the photographer, as they usually prevent clouds from forming for at least a short distance inland.

Among the shots were some of the Moro fishing village at Jolo. This is a jungle of shacks built over the water originally by the immigrating Chinese pirates who did not get along amicably with the Moro Datus. That early animosity has disappeared, but the shacks remain - a jumble of bamboo poles and thatch, reached by rickety catwalks of rotting poles laid two or three side by side. Here life is extremely simple, unashamed and olfactory. The three-in-one plan is followed - bathing, garbage and sewage disposal, and fishing being done in the same water under each house. It is regrettable that aerial photographs lack the ability to capture some of the rank smells that pervade the village. Shots were also made of a village of Sea Gypsies built over a large reef off the east coast of Jolo. These villages are semi-permanent and are made by raising their sailing vintas above the sea on bamboo stilts. An entire family lives in one vinta under a nepa roof. There are no rents, but the style can hardly be imagined.

The Floating Islands of Liguasan Marsh in Mindanao were photographed, possibly for the first time. Here decaying lily pads and swamp grass form a fertile soil insecurely based on the matted roots un-

(Continued on page 8).

GRADUATION OF FLIGHT SURGEONS

FIVE medical officers of the Regular Army and one from the Navy graduated on Saturday, November 14, 1936, following the completion of the four months' basic course of instruction at the School of Aviation Medicine, Randolph Field, Texas. These graduates were assigned to stations, as follows:

Captain Stuart A. Cameron, Chanute Field, Rantoul, Ill.

Captain Jasper N. Knox, Rockwell Field, Calif.

Captain Cyril E. McEnany, Kelly Field, Texas.

Captain Carl R. Darnall, Selfridge Field, Mich.

Captain F. Whitney Hall, Fort Leavenworth, Kansas.

Lieut. Thenton D. Boaz, M.C., U.S.Navy, Naval Air Station, Pensacola, Fla.

At the graduating exercises held in the School Building, the class was addressed and presented with diplomas by Colonel Haywood S. Hansell, Medical Corps, the Surgeon of the 8th Corps Area, Fort Sam Houston, Texas. Major G.J. McMurray, the Chaplain at Randolph Field, delivered the invocation and benediction. Colonel A.D. Tuttle, Medical Corps, the Commandant of the School of Aviation Medicine, presided.

Among those present were Brigadier General James E. Chaney, Air Corps, Commanding General of the Air Corps Training Center, Randolph Field; Colonel Arnold N. Krogstad, Air Corps, Commandant of the Air Corps Advanced Flying School, Kelly Field; Colonel Henry W. Harms, Air Corps, Commandant of the Air Corps Primary Flying School, Randolph Field, and Colonel A.P. Clark, Medical Corps, Assistant to the Surgeon, 8th Corps Area, and formerly Commandant of the School of Aviation Medicine.

The course at the School of Aviation Medicine includes instruction in Ophthalmology and Otology, Aviation Medicine, (including Physical Diagnosis and Cardiology, Physiology and Administration), Psychology and Neuropsychiatry. It is of four months' duration and is conducted twice annually, starting July and December of each calendar year. In addition, as a year-round activity, the School conducts an extension (correspondence) course in Aviation Medicine, in which there are now 416 enrollees from all parts of the country. About two years are required to complete this correspondence course, and before a diploma as a Flight Surgeon can be awarded, it must be supplemented by a six weeks' practical course at the School of Aviation Medicine or at its branches at Langley Field, Va., or March Field, Calif.

The present force on duty at the School now comprises the following officers, also nine enlisted men and seven civilian employees:

Colonel Arnold D. Tuttle, M.C., Commandant.

Major Frank R. Borden, M.C., Assistant Commandant and Director of Extension Courses.

Major Neely C. Mashburn, M.C., Director, Department of Psychology.

Major Charles F. Snell, M.C., Director, Department of Aviation Medicine.

Captain John M. Hargreaves, M.C., Director, Department of Ophthalmology and Otology.

Captain Walter S. Jensen, M.C., Director, Department of Neuropsychiatry.

Captain Charles L. Leedham, M.C., Assistant Director, Department of Aviation Medicine.

Captain Benj. R. Luscomb, M.A.C., Executive Officer and Secretary.

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AID BY AIR TO STRANDED ARTILLERYMEN

During the last typhoon in the Philippines, a motorized battery of Field Artillery from Fort Stotsenburg, returning home from a field trip, was marooned on a sand bar in the middle of the Bamban River when half way across. A sudden rise of water and a new channel cut behind them prevented their continuing across the ford or retracing their path to higher ground. During the two days of their isolation, Lieuts. Paul B. Wurtsmith and William M. Morgan, Air Corps, of the 3rd Pursuit Squadron, Clark Field, P.I., made several flights to the sand bar and dropped food and medical supplies to the Artillerymen.

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ACTIVITIES AT THE FAIRFIELD AIR DEPOT

The month of October saw considerable activity at the Fairfield Air Depot. The production figures at the end of the month showed ten airplanes and sixty-six motors had received major overhaul. Nineteen PB-2A airplanes from Selfridge Field are being equipped with the new oil dilution system preparatory to taking part in this winter's maneuvers. The first of these has already been completed.

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"BAILING OUT"

(Continued from Page 3).

that she was sure that he had landed in the bay for the reason that she had read in the paper that the cadet had 'bailed out.'"

17TH ATTACK GROUP IN FIELD MANEUVERS

For the second consecutive year, March Field dispatched its 17th Attack Group to Bakersfield, Calif., for its annual fall maneuvers. Under the direction of the Seventeenth's new commander, Lieut. Colonel Carlyle H. Wash, individual squadrons of the Group have occupied the Bakersfield camp site, located at the Kern County Airport, since the middle of October.

Preceding the Group maneuvers, held during the week November 4 to 10, the field was occupied for successive weeks by the 34th and 73rd Attack Squadrons, respectively, 1st Lieut. Nathan Bedford Forrest commanding the 34th, and Major L. C. Mallory, the 73rd. Upon completion of the Group maneuvers, the 95th Attack Squadron, commanded by 1st Lieut. Ernest H. Lawson, remained for a week's operations to complete the field requirements for the entire Group.

For the first time since the arrival of the new A-17 Attack planes, the entire Group cooperated in the tactical machine gun and bombing missions directed against the Lake Muroc target areas, particular attention being focussed on light bombing.

The News Letter Correspondent states that "the conspicuous efforts on the part of the good citizens of Bakersfield to make our 'war' a pleasant one obviously stirred a profound satisfaction in the hearts of our seasoned campaigners as they viewed the newly installed and permanent conveniences on every hand. Hot and cold showers, convenient and modern toilet facilities, tent sites wired for electricity and supplied with gas were among the numerous novelties designed to take the sting from our annual brush with the elements. Life in the open, however, is never without its share of hardships and privations.

In this instance, the Group's collective ear was constantly subjected to a clamor and din that simulated perfectly the harrying pandemonium characteristic of World War hostilities - the disturbance arising from a hundred conflicting radio programs that poured from a hundred loud speakers to engulf the camp in a veritable inundation of discord. Still, a soldier is a soldier and one must expect such things when 'roughing' it."

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To date, Randolph Field has received a total of 69 new Training planes since delivery began last April. Of this number, 19 are BT-8 (Seversky); 28 BT-9 (North American) and 22 PT-13 (Stearman). All of these new types of planes are now being used in connection with student training. So far, no difficulty has been encountered in connection with their use as a training plane.

2ND BOMBARDMENT GROUP IN JOINT MANEUVERS

The recent joint maneuvers utilizing the fighting forces of both Army and Navy, held off the Virginia-Carolina coast, which precipitated national interest, was actively participated in by the 2nd Bombardment Group, GHQ Air Force. The use of the Air Corps Reconnaissance and Bombardment organizations in coast defense tactics was a unique and highly enlightening experience for all officers and enlisted personnel concerned. Daily missions were flown out over the ocean for distances varying from 50 to 125 miles, which flights culminated with the bombing of targets towed on the surface by naval vessels. Valuable lessons in reconnaissance, communications, bombing and formation over water operations and navigation were chief among the advantages accruing from the maneuvers. The services of every member of the Group were utilized during the cooperative exercises, and it was generally agreed that these particular maneuvers were the most interesting and informative that the Group has ever participated in.

During the course of the exercises, the 2nd Bombardment Group (less 20th Bombardment Squadron, with 99th Bombardment Squadron attached) dropped a total of 108 type MK-1 and 135 type T-1 bombs, 100-pound weight; also, 410 type MK-1, 300-pound bombs. The maneuvers, especially the bombing of moving surface targets, and the degree of accuracy maintained throughout the exercises is still a source of pride to all concerned.

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THE A-17 VERSUS THE A-8 ATTACK PLANE

The Correspondent of the 37th Attack Squadron, Langley Field, Va., states that not long ago a file of Unsatisfactory performance Reports on the A-17 airplanes came to that organization for its information. After a perusal of the file, it was practically unanimously decided that the reporting officers should have been assigned a flock of A-8's previous to the A-17's, when most of the minor deficiencies would have seemed like luxuries.

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FAST GOING FOR NEW TRANSPORT PLANE

The new Douglas C-33 Transport plane assigned to the Fairfield, Ohio, Air Depot established on November 14th what is believed to be a record run for transport planes between Patterson Field and Bolling Field, D.C.

Aided by a strong tail wind, and piloted by Privates Treweek and Davis, with Lieut. Colonel John G. Colgan and Private Wood as passengers, the trip was made in one hour and forty minutes, an average of nearly 240 miles per hour.

LONGER TRAINING IN BT-2'S

According to the publication THE TEE, published by the Flying Cadet Battalion at the Air Corps Primary Flying School, Randolph Field, Texas, Primary Stage students will probably be given a longer period of transition time in the BT-2B planes than that received by the July class, before passing on on to the Basic Stage and the faster and more powerful "8's" and "9's". The above is contingent upon weather conditions.

The item in THE TEE is to the effect that "the report is that this time may be extended to include two or three weeks, and it is expected that the increase of experience in the larger ships will have a very definite value when work on the Basic Stage has begun. Should prevailing bad weather delay flying operations during the more elementary phases, however, this amount of transition time will necessarily be shortened due to the necessity of accomplishing the prescribed training in the stipulated time.

The program of instruction for the class of October on A Stage is expected to be on much the same order as that given the preceeding classes, and will occupy approximately the same periods of time."

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SELFRIDGE FIELD PILOTS JOIN P.A.A.

Lieut. D.S. Dunlap, Air Reserve, and Flying Cadet B.E. Michael, Air Corps, will leave Selfridge Field to accept positions with the Pan American Airways. Lieut. Dunlap will report for duty at Brownsville, Texas. Cadet Michael is to be stationed at Miami. For a period of three years, these men will be rated "Apprentice Pilots." During this time they will be students in the Pan American schools. Only after qualifying as Radio Operators, Airplane Mechanics and studying varied subjects will they be allowed to take the examination for the "Junior Pilot" rating.

According to the bi-monthly publication of the Pan American Airways, there are now based at Miami a total of 27 young pilots-in-training, known as apprentice pilots. These men, all college graduates, have also finished in Navy and Army flying schools. They came from home towns scattered throughout the country.

Ten of the 27 students, above mentioned, are graduates of the Air Corps Training Center and Air Corps Reserve officers, viz: J.C. Britton, E.H. Hale, C.V. George, Horace Brock, C.A. Goyette, F.P. Glen, J.E. Anderson, D.C. Pearsen, W.J. Garrison and J.M. McLeod.

INSTRUCTORS AT ADVANCED FLYING SCHOOL

The following-named Air Corps officers have been designated as instructors at the Advanced Flying School, Kelly Field, Texas, for Class No. 27-B, October 15, 1936, to March 1, 1937:

FLYING TRAINING

Director
Major Robert D. Knapp

Attack Section
Captain Glen C. Jamison (Chief)
Captain Clifford P. Bradley
1st Lieut. John H. Ives*
2nd Lieut. Clarence M. Sartain*

Bombardment Section
Major Robert T. Cronau (Chief)
Captain James M. Fitzmaurice
Captain Walter G. Bryte
1st Lieut. Troup Miller, Jr.*
1st Lieut. Edward J. Timberlake, Jr.
1st Lieut. Edgar R. Todd

Observation Section
Captain Otto P. Weyland (Chief)
Captain Russell E. Randall
1st Lieut. Samuel E. Anderson
1st Lieut. August W. Kissner

Pursuit Section
Captain Clyde K. Rich (Chief)
1st Lieut. Jerald W. McCoy
1st Lieut. John H. Bundy*
2nd Lieut. Marvin F. Stalder

*Temporary duty ACPFS, Randolph Field.

GROUND SCHOOL

Director
Captain Clarence E. Crumrine.

Subjects
Aerial Photography - Captain James M. Fitzmaurice.
Attack Aviation - Captain Glen C. Jamison.
Bombardment Aviation - Major Robert T. Cronau.
Bomb Racks, Bombs and Explosives, Bomb Sights, Trap Shooting - 1st Lieut. William L. Kennedy.
Code Practice - Captain Ralph E. Holmes.
Combat Orders, Squadron Duties of Junior Officers, War Planning Principles - Captain Clarence E. Crumrine.
Cooperation with Artillery - Captain Russell E. Randall.
Infantry Missions - 1st Lieut. Samuel E. Anderson.
Military Organization - 1st Lieut. Roy D. Butler.
Observation Aviation - Captain Otto P. Weyland.
Pursuit Aviation - Captain Clyde K. Rich.
Reconnaissance - 1st Lieut. August W. Kissner.
Signal Communications - Captain Hobart R. Yeager.

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During the month of October the Engineering Department of the San Antonio Air Depot overhauled 20 airplanes and 91 engines and repaired 11 planes, 23 engines.

ILLINOIS NATIONAL GUARD AVIATION ACTIVITIES

By 1st Lieut. Monro MacCloskey, Adjutant
33rd Division Aviation, Ill. N.G.

ONE of our junior officers, Lieut. J.P. Dunne, returned early this month after completing a nine weeks' course at the Motor Transport School given at Fort Holabird, Maryland. Lieut. Dunne is the Transportation Officer of our organization, and we are now expecting great things of him as a result of his recent learning.

We lost Staff Sergeant George Miller for the next several months to the Aircraft Armament Course at the Air Corps Technical School. Sergeant Miller has been on the permanent detail at Chicago for several years. Approximately 50% of this permanent detail will be graduates of the Air Corps Technical School when Sergeant Miller has completed his course. It is planned that before long all the men of this detail will have completed the various courses at the Air Corps Technical School.

At our last weekly drill we had as one of our guests Colonel Phil Love, the Division Air Officer of the Missouri National Guard. Colonel Love pointed out that his unit was planning the same schedule as we have - namely, that of the officers gathering for dinner and having their officers' meetings prior to the actual Drill. These meetings have proved of great benefit. During the past month, our Engineering Officer, Captain Newhall, has given us some skull practice, and most of us found ourselves lacking in some important phases in the handling of the airplane motor. We have been holding these weekly meetings for the past couple of years, and they are a source of entertainment as well as instruction to all of us.

Lieut. Casey who, when not flying airplanes, is the Superintendent of the Municipal Airport, gives us some interesting statistics with reference to the completion of his so-called "rock garden":

"W.P.A. PROJECT 1097
CHICAGO MUNICIPAL AIRPORT

Early in 1935 work was started on laying out the plans for the improvements at the airport by the airport personnel with the assistance of City engineers and plans completed in September. The plans were submitted and approved, and work started on November 12, 1935.

The plans called for a new sewerage system, widening and extending the present concrete ramp, straightening out, widening to uniform width of 175' and paving of all runways with macadam asphalt, with a concrete curbing.

The total amount of the improvements as set up in the project amounted to approximately $2,134,000.00.

All sewerage work is now completed.

Paving of runways is now about 80% completed.

The concrete ramp has been widened along the East and South edges of the field, and work is now in progress in extending the ramp along the South and West edges of the field.

A complete new runway lighting system has been installed and is now in operation."

Incidentally, the sewerage work calls for about 10 miles of pipe. The concrete work consists of 29,382 square yards, or 4,497,300 pounds, and the asphalt used consisted of 90,276,000 pounds of stone and 4,728,252 pounds of asphalt. Needless to say, the condition of the "rock garden" has been a mental hazard, especially at night, for all visiting pilots, and we will soon cheer when the work is completed.

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IMPROVEMENTS AT FAIRFIELD AIR DEPOT

Under the direction of Major Ralph B. Walker, Chief Engineering Officer at Patterson Field, the Engineering Shops have undergone modification that has greatly increased production along the motor assembly line, and increased facilities for final assembly of airplanes and engines. The motor test stand is to be removed to a building at the far end of the post, thereby eliminating considerable noise which has heretofore been a great inconvenience to the Engineering Shops.

The insulated ceiling and the steam heating plant in the new steel hangar have already proven to be an improvement over the old wooden hangar during the cold weather. It is large enough to accommodate all the airplanes for final inspection and test flight plus the final paint shop, and the work can be carried on under ideal conditions in this new building.

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Photography and Hunting in Philippines

(Continued from Page 4)

derneath. The whole mass moves here and there propelled by the wind. This may be as much as 2 to 3 miles per day, according to authentic reports. Some of the larger islands are several acres in extent, and solitude loving Moros build shacks and grow their crops thereon. Interesting problems of crop ownership arise from the roving nature of these Floating Islands, settled by a sharp-edged kriss or the Philippine Constabulary.

Weeks could be spent among the Southern Islands of the Philippines doing interesting oblique aerial photography, not to mention the verticals needed for map making in the regions still marked "Unexplored" on the best maps yet made.

FLYING IN PANAMA

By 1st Lieut. Dwight Divine, Air Corps

PANAMA is not precisely a flyer's paradise. As a matter of fact, worse conditions for cross-country flying are hard to find. At first thought, this would seem to imply that the weather is the worst in the world, but the reverse is more nearly correct. The terrain of the country, the dense vegetation and the scarcity of population are primarily responsible for the hazards that do exist.

The Isthmus of Panama, lying nearly east and west, is split by a range of mountains running from one end of the Isthmus to the other. While not of extreme height, the highest peak reaching only 11,000 feet, they are still a source of annoyance because of the frequent low ceilings. Naturally, such a condition necessitates low flying, with the resulting impossibility of using a parachute in case of trouble.

However, the majority of cross-country flying in Panama is along the coasts. There are few level areas which might be called coastal plains, except far to the west along the southern coast. Here are large, level fields, with fine turf; fields capable of being made into first class airdromes. But this small stretch has apparently preempted all the flat country in Panama. Elsewhere the coasts present either a palisade of rocky cliffs, or narrow beaches with dense tropical vegetation to the very edge of the water. The area between mountains and coasts is for the most part cut up by rocky gullies and ravines, the whole well dotted with scrub growth.

The weather conditions are peculiar. During the dry season, which is officially four months, from about December 15 to April 15, flying conditions are very good. During this time there is little, if any, rain, either by day or by night. The rainy, or "moldy" season, however, is very much different. The rainfall is heavy - about an average of 100 inches per year. This rain is usually in the form of showers which, although scattered, are very severe. Occasionally, a more or less general storm will occur which is impossible to go around. In the States, of course, the answer would be instrument flying, but in Panama there are numerous reasons why this is not practicable. First, there are almost no weather stations, and that makes it impossible to obtain wind aloft reports; second, there is but one radio beacon - at France Field; third, rain storms appear with great rapidity, apparently from nowhere, and when starting for a given point it is highly probable that a big black storm will get there before you do. Since, however, these storms are usually of short duration, it is eventually possible to land at the objective.

As for fog, snow, hail and ice, they do not deserve a second thought. True fog of any intensity is extremely rare. There is no record of either snow or ice, and hail has been observed only two or three times in the past twenty years. Severe storms do not occur, that is, a high wind never accompanies a rain, and it is extremely seldom that any high winds appear.

Cross-country equipment carried in all planes consists of everything but the kitchen stove, as the old saying goes. Due to the great stretches of uninhabited jungle, a pilot forced down is faced with the prospect of quite an extended camping trip. If he is so fortunate as to find his plane, after bailing out, he will have water, a gun, ammunition, emergency rations, a compass, a head net, quinine, iodine, a bolo, a map, and a beautiful prospect.

A later development, which has been in use at Albrook and France Fields for about a year, is the parachute jungle emergency kit. This consists of a container for all of the articles mentioned in the preceding paragraph, and it is designed as part of the parachute seat. Thus, the pilot is assured of something to start with even though the ship cannot be found. Unfortunately, this kit, while very compact, is bulky enough in the case of a tall P-12 pilot to cause his head to project considerably above the windshield into the slipstream, even with the seat all the way down.

Real practice in navigation is rather scarce. The Isthmus is comparatively small, and after a pilot has flown over it for a few months, he becomes familiar with the whole terrain. It is then easy to fly to almost any point without map or compass, especially since most of the flying is done along the coasts. If any real navigation is to be used, it is necessary to fly a course over some of the worst country imaginable. An old Air Corps proverb down here says that there isn't any place to go in Panama, and when you get there you might as well have stayed home. That isn't so far from the truth. Outside of Panama, Colon and David, there are almost no towns of any size. There are a few which have frame and concrete buildings, but the majority consist of native grass and 'dobe houses, with perhaps a stone or concrete church.

One little town on the southern coast is a good example of the isolation of some of these people. Jaque (pronounced hah-kay) is about 175 miles from Panama City by air. Although on the coast, their sole contact with the rest of the world is a small Panamanian trading vessel that docks there once every three months! Of course, this does not take into account the periodic visits of Army aircraft. A rather amusing incident occurred when the last flight landed at Jaque. The Mayor's right hand man brought out the town's official (and only) alarm clock and requested the correct time. It turned out that the whole town had been 30 minutes slow for some time. They also requested news of the presidential inauguration in Panama, wanting to know if there had been a revolution this time. There hadn't.

It seems strange to reflect that probably eighty percent of these people in this little town have never seen an automobile or a trolley car, and yet an airplane to them is almost commonplace.

Brigadier General George H. Brett, Air Corps, Commander of the 19th Wing, is of the opinion that every pilot should have training on modern types of aircraft. But down here that affords something of a problem, since many of the airplanes on the Isthmus are not of the latest types. The modern planes are the Martin B-10's, and since they are assigned to the Observation squadrons the Pursuiters and Bombers do not ordinarily fly them. Under a schedule now partially completed, however, each pilot will fly five hours and make at least fifteen landings in a B-10. Thus, when he returns to the States, he will not be completely lost. Of course, this flying keeps the B-10's pretty busy, since they are used for this special training in addition to regular tactical use.

It would seem that a few modern training ships, such as the new Seversky Trainers, could be used to great advantage in the Panama Canal Department, since what modern tactical ships we have would then be released for tactical flying only - of which there is plenty to be done.

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AERIAL FREIGHT HANDLING AT FAIRFIELD

The Transport Squadron at the Fairfield Air Depot, Patterson Field, Ohio, commanded by Captain Russell E. Cooper, has received both of their C-33 airplanes, thus giving them a complement of four Transport planes. Due to this increase in the number of airplanes and the increasing amount of freight, the Squadron has found itself confronted with the problem of properly handling shipments. A new system of shipping tickets and way bills is being devised, and it is hoped that a satisfactory method of handling freight shipments will be worked out with the Supply Depot in the near future.

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Lieut. Alva Marsh, Air Reserve, who was on active duty for a brief period with the 37th Attack Squadron, Langley Field, Va., left this organization recently to accept employment with a commercial air line.

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ACTIVITIES OF THE 77TH PURSUIT SQUADRON

The opening days of November found the 77th Pursuit Squadron, Barksdale Field, La., in the field at New Orleans, La., with the Third Wing, working interception problems with the Third Attack Group.

The News Letter Correspondent states that this maneuver will long be remembered as the sandiest in history. "Other reminders that we were in the field," he says, "included mosquitoes, high winds sagging the tents, and cold damp temperatures to keep us sleeping in our flying equipment. Lieut. C.N. Piper, lately from Selfridge Field, suffered from the cold more than any other pilot. He thought it couldn't get cold down south, so didn't take cover.

The rest of the period was devoted to preparation for the Charity Demonstration given at Barksdale Field, November 15th. Lieuts. Piper, Cy Wilson and Dave Desmond made up an acrobatic team that would be hard to beat. They certainly held the attention of the huge crowd as they performed their acrobatic maneuvers while in close formation. The 77th Squadron also furnished six planes and pilots to fly with the composite squadron that flew for the purpose of demonstrating Pursuit maneuvers. The audience especially enjoyed the firing of the Squadron and went away with stiff necks from watching the precision flying of the squadron."

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55TH PURSUIT SQUADRON AT SHUSHAN AIRPORT

November 1st found the 55th Pursuit Squadron, stationed at Barksdale Field, La., in the final stages of annual Fall Maneuvers, encamped with other squadrons of the Third Wing at Shushan Airport, New Orleans, La.

The maneuvers consisted largely of patrol and radio net problems to intercept Attack airplanes simulating enemy forces. The 55th Squadron was most consistently instrumental in apprehending and subduing the opposing forces. Featured on the final day of the encampment was a Wing Review over the city of New Orleans.

Various so called hardships were endured by the squadron personnel in camp because of unusual weather conditions. Rain, high winds and biting cold contributed to discomforts of out of door living and made breaking camp appear as one of the most pleasant tasks of the maneuvers.

Following the return of the 55th to Barksdale Field, its personnel werebusily

(Continued on Page 16).

THE 79TH PURSUIT SQUADRON AT NEW ORLEANS
By the News Letter Correspondent

The 79th Pursuit Squadron of Barksdale Field, Shreveport, La., left their home station on the afternoon of October 26th, and as the support echelon of the 20th Pursuit Group we proceeded to New Orleans, via Baton Rouge, landing at Shushan Airport, our base during the maneuvers, at 3:30 p.m.

Shushan Airport, on the southern edge of Lake Ponchartrain, is one of the finest airports in the country. It is built out into the lake, affording perfect approaches to all runways.

The camp site for the officers and men of the Third Wing was on the west end of the field, normally a parking area. This was a fine location until the weather "cooked up" a thirty-mile-an-hour gale from the north, bringing half the lake into the officers' tents. Tent pegs pulled up - tents fell down - clothes got wet so badly some of the pilots of the Attack Group had to move.

Our daily missions took us to several cities in the south, among them Pensacola, Florida; Montgomery, Ala., and Mobile, Ala. For the most part, the Third Attack Group simulated the enemy forces for the 20th Pursuit Group. To show the maneuverability of a group of airplanes on a field such as Shushan, the 34 planes of the 20th Pursuit Group from alert took off individually and cleared the field in four minutes.

The Pursuit Group successfully intercepted and attacked on all patrol missions, but radio failure prevented success on two radio controlled interception missions.

The administration building turned out to be a fine place for a game of bridge or a "bull session" during the evenings. The climax of the evening's activities out at the field was to see that the 9:15 transport got off O.K. Of course, all went to town sooner or later. What with Galatoite's "Trout Marguery," Arnaud's "Shrimp Arnaud" and Kolb's "Weiner Schnitzel," who could blame us?

One of the high lights of the maneuvers was the Hallowe'en party given the officers of the Third Wing by the New Orleans Chamber of Commerce, held in the beautiful administration building at the Shushan Airport, where music, horn-blowing, and dancing held sway until the wee hours of the morning.

Having completed the series of problems required, the Third Wing broke camp on the afternoon of November 5th and returned to our home station, Barksdale Field.

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Three bombers in the 96th Bombardment Squadron, Langley Field, Va., recently qualified as "Expert Aerial Bombers" under the provisions of the new tentative Training Regulations 440-40.

CHANGES AT LONG BEACH MUNICIPAL AIRPORT

The long Beach, Calif., Municipal Airport is undergoing a complete reworking, the only section not being picked up and turned around being the Army Base in the southeast corner. The Navy's Aviation Reserve is moving in alongside the Army on the West, then the Airport Superintendent and, lastly, the civilian operators - all operations being lined up from East to West along the south side of the field. The new runways have been completed and will be officially opened to traffic about December 1st.

The 479th Reserve Squadron is very proud of its home and extends to all its fellow organizations an invitation to drop in and see a set-up that is practically perfect.

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AS OTHERS SEE US.

In a recent issue of that excellent British aeronautical publication, THE AEROPLANE, London, Eng., there appeared the following item:

"WAR MACHINES FROM THE STATES

Last week a story was splashed all over the Press to the effect that the Air Ministry was going to buy fighting machines from America. Few things seem less likely. None denies that the Americans have some very good fighting machines, but they seem to have nothing which compares with the Supermarine Spitfire or the Hawker Hurricane as single-seaters, or the Westland or the Battle as two-seaters.

Apparently the story arose originally because a newspaper man at an aerodrome heard a youthful member of an aircraft family remark casually that when the Air Ministry had asked his elder relative what it could do to get fighting machines quickly, he had retorted humorously,- 'Why don't you buy them from America?'"

Elsewhere in this same issue of THE AEROPLANE, in an article touching on the visit to London of a prominent figure in American aviation - one who some years ago published an aeronautical weekly - the Editor of THE AEROPLANE wrote this paragraph. We quote:

Two years before, in 1922, Curtiss seaplanes had come over here and had carried off the Schneider Trophy. Mr. C.R. Fairey was so much impressed by their performance that he went to the States in 1923 and had bought the British rights in the Curtiss aeroplane designs and in the Curtiss D.12 motor, and in 1924 produced the first of the Fairey Foxes, which set a completely new fashion in European aviation,- a fashion which with variations still carries on to-day. Unquote.

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The News Letter would appreciate contribution of material "regularly and frequently" from Mitchel, March and Moffett Fields, and the Middletown Air Depot.

Biographies

COLONEL FRANK D. LACKLAND

Colonel Frank D. Lackland, Air Corps, now on duty as Chief of the Field Service Section, Wright Field, Dayton, Ohio, became affiliated with the Air Corps during the World War when, in November, 1917, holding the rank of Captain of Infantry, he was promoted to the rank of Major (temporary) Aviation Section, Signal Corps, and assigned to duty at Kelly Field, Texas.

Born in Farquier County, Va., September 13, 1884, Colonel Lackland attended the public schools of Virginia and Washington, D.C., following which he studied law. For eight years he was a member of the National Guard of the District of Columbia, serving from 1903 to 1911 through various grades from Private to Captain.

Passing the examination for appointment in the Regular Army, he was commissioned a second lieutenant of Infantry on February 11, 1911, and during the succeeding six years served with the 11th, 13th, 31st and 22nd Infantry regiments.

He served a tour of duty in the Philippines at Camp McGrath, performing at various times duty as Post Engineering Officer, Signal Officer, Intelligence Officer and Battalion Quartermaster, and for 2½ years, April, 1915, to November, 1917, he was with an Infantry machine company.

At Kelly Field, Colonel Lackland was Executive Officer and Commanding Officer, Recruiting Regiment and Trades Division, from November, 1917, to April, 1918. Thereafter, until January, 1919, he was Executive Officer, School Director and Commanding Officer of the School of Aerial Gunnery at Selfridge Field, Mich. He commanded Selfridge Field from August, 1918, until January 23, 1919, when he was transferred to Langley Field, Va., where he was Post Commander to May 19, 1919, and Officer in Charge of Recruiting to July, 1919. From July to September, 1919, he performed the duties of Executive Officer and Acting Supply Officer.

Transferred to Ellington Field, Houston, Texas, he commanded the 166th Aero Squadron from September 10th to the 26th, when an injury in an airplane accident confined him to the Walter Reed General Hospital for several months.

On December 18, 1919, Colonel Lackland assumed command of the Aviation Repair Depot at Montgomery, Ala., and he continued on this assignment until October, 1920, when he was detailed as student at the Air Service Engineering School at McCook Field, Dayton, Ohio. Graduating from the Engineering School in September, 1921, he assumed the duty of Air Officer of the 8th Corps Area on November 18, 1921, On September 1, 1922, he assumed command of the San Antonio Air Depot, and he remained on this duty until June 25, 1926, when he assumed command of the 3rd Attack Group at Fort Crockett, Galveston, Texas. Two years later, he was assigned as student at the Air Corps Tactical School at Langley Field, Va., and, following his graduation in June, 1929, he was a student at the Command and General Staff School, Fort Leavenworth, Kansas, for the next two years, following which he assumed command of the 12th Observation Group at Fort Sam Houston, Texas, which organization was subsequently moved to Brooks Field, Texas.

Colonel Lackland commanded the 12th Observation Group and the post of Brooks Field until June, 1934, when he was assigned to duty in the Plans Division, Office of the Chief of the Air Corps, Washington, D.C.

In March, 1935, he was assigned to his present duty as Chief of the Field Service Section, Wright Field.

Colonel Lackland was promoted to 1st Lieutenant, July 1, 1916; to Captain, May 15, 1917; to Major, July 1, 1920; to Lieutenant Colonel, August 1, 1935, and to Colonel (temporary) August 26, 1936. He took flying training both at Kelly Field and at Langley Field, and received the rating of Junior Military Aviator, effective June 24, 1919.

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COLONEL JOHN N. REYNOLDS

Colonel John N. Reynolds, Air Corps, now on duty as Air Officer of the 1st Corps Area, Boston, Mass., was born in Washington, D.C., December 26, 1885, and was educated in the schools of that city.

Appointed a second lieutenant, Coast Artillery Corps, U.S. Army, September 25, 1908, he served for a brief period at Fort DuPont, Del.; at Fort Schuyler, N.Y., from November 8, 1908, to August 30,1910; at Fort Mills, P.I., October 4, 1910, to April 15, 1912; at the Presidio of San Francisco, Calif., May 15 to December 1, 1912; at Fort Monroe, Va., December 31, 1912, to December 1, 1913; at Fort DuPont, Del., January 1, 1914, to January 1,1915, and at Fort Screven, Ga., February 1,1915, to October 20, 1916.

Detailed to the Aviation Section, Signal Corps, Colonel Reynolds was a student at the Signal Corps Aviation School at San Diego, Calif., from October 25, 1916, until May 20, 1917. He received the rating of Junior Military Aviator, effective June 15, 1917. After brief periods of duty with the 1st Aero Squadron at

Columbus, New Mexico, and following his relief from that organization, at Kelly Field, Texas, he departed for duty overseas and arrived in France February 3, 1918. His first assignment overseas was with the 1st Observation Group in command of the 91st Aero Squadron. In August, 1918, he was appointed Commander of the Observation Group, 1st Army, which organization rendered excellent service at St. Mihiel and west of the Meuse. On numerous occasions, Colonel Reynolds took part in visual and photographic reconnaissance missions with his squadron and performed excellent and arduous individual service over the front lines in addition to his work as an efficient executive.

Colonel Reynolds was the recipient of the Distinguished Service Cross and a Bronze Oak Leaf, the respective citations accompanying same being as follows:

"For extraordinary heroism in action in the region of Verdun, France, 10th October 1918.

Major Reynolds proceeded over the enemy lines without benefit of protection planes on a mission of great urgency. He flew about twelve kilometers over the lines when he was suddenly set upon by fourteen hostile planes. He fought them off and succeeded in downing one of the enemy. He continued his flight with his badly damaged plane and concluded his mission."

"For extraordinary heroism in action in the region of Grand Pre, France, 29th October 1918.

While on a mission, Major Reynolds was suddenly set upon by six enemy aircraft. Although in the German territory, without protection and in danger of being cut off in the rear, he entered into combat with the hostile aircraft. He succeeded in shooting down two of the enemy and dispersing the rest of the formation. With his machine severely damaged, he continued until he had completed his mission."

Commending him for his distinguished service, the late General William Mitchell stated:

"Lieutenant Colonel John N. Reynolds, Commanding Officer, Army Observation Group, an officer of the highest type; a man who would never ask a member of his command to execute a mission which he would not perform himself. Admired, respected and beloved by every officer and man serving with his units, he built up an organization of splendid morale and remarkable efficiency. His intense energy, organizing ability, devotion to duty and high ideals, combined with a thorough knowledge of every detail connected with the functions of Army observation squadrons bore splendid fruit throughout the summer operations of the Eighth French Army, and during each offensive of the First American Army from the date of its formation to the cessation of hostilities."

Upon his return to the United States, Colonel Reynolds reported, on January 12, 1919, for duty in the Office of the Director of Military Aeronautics, Washington, D.C. On March 5, 1919, he assumed command of Godman Field, Camp Knox, Ky., and in the following month, on April 23rd, he returned to Washington for duty in the Training and Operations Group, Office of the Director of Military Aeronautics. On August 28, 1919, he reported for duty at Langley Field, Va. From October 4 to October 28, 1919, he participated in the Transcontinental Reliability Test Flight.

Relieved from duty at Langley Field July 9, 1920, where he served in the capacities of Commanding Officer of the post, commander of the 2nd Observation Wing and Post Air Service Officer, Col. Reynolds assumed command of Chanute Field, Rantoul, Ill., on July 23, 1920.

In January and February, 1921, he was on duty as Air Officer of the 8th Corps Area at Fort Sam Houston, Texas, and on February 18th he assumed command of Kelly Field, Texas. On February 3, 1922, he was assigned as Wing Operations Officer at Kelly Field, and on June 21, 1922, he assumed command of the 10th School Group at that station.

Transferred to Langley Field, Va., Colonel Reynolds commanded this post February 15 to March 7, 1923, and was commanding officer of the 2nd Bombardment Group from February 15, 1923, to October 15, 1923, when he was assigned to duty as student at the Air Service Tactical School, Langley Field. His graduation from this school in June, 1924, was followed by another year of duty as a student at the Command and General Staff School, Fort Leavenworth, Kansas, from which he graduated in June, 1925. He was then assigned as Commanding Officer of the 12th Observation Squadron and Second Division, Air Service, at Biggs Field, Fort Bliss, Texas, the station of which was changed to Fort Sam Houston, Texas, in June, 1926.

In January, 1928, Colonel Reynolds was transferred to Mitchel Field, N.Y., and he commanded this post and the 9th Observation Group from January 12th to June 5, 1928, and Post Operations Officer to October 25, 1928. For several months thereafter he was Acting Air Officer of the 5th Corps Area at Columbus, Ohio. Following the completion of a special course of instruction for field officers at the Chemical Warfare School at Edgewood, Md., July-August, 1929, Colonel Reynolds was transferred to Langley Field, where he was Operations Officer, Executive Officer, Acting Commandant of the Tactical School and Commander of the post and of the 2nd Bombardment Group during various periods until July 5, 1930, when he was assigned to duty at Aberdeen Proving Ground, Md., in command of the Air Corps Detachment. In the fall of 1931, he reported at the Field Artillery School at Fort Sill, Oklahoma, for duty as Instructor. In October, 1935, when he was assigned to foreign service, Col. Reynolds assumed command of the 19th Composite Wing in the Panama Canal Department. His service in the Canal Zone was of brief duration, however, due to his physical condition, and after he was relieved from treatment at the Walter Reed General Hospital he was, on March 15, 1936, assigned to his present duty at Boston.

Colonel Reynolds was promoted to 1st Lieut., April 22, 1910; to Captain, July 1, 1916; to Major, Signal Corps (temporary) March 5, 1918; to Lieut. Colonel, Air Service, November 9, 1918 to April 13, 1920; to Major, Air Service, July 1, 1920; to Lieut. Colonel, Air Corps, January 1, 1933, and to Colonel, June 16, 1936. While a Coast Artillery officer, he graduated from the Coast Artillery School in 1913. He was given the rating of Military Aviator, April 3, 1918, for distinguished service in action.

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AIR CORPS OFFICERS OBSERVE NAVY MANEUVERS

When the aircraft of the Fleet Air Base, Luke Field, took off on November 2nd for their annual ten-day advance base exercises in waters to the northwest of the Hawaiian Islands, Air Corps officers accompanying the flight in the capacity of observers were Major Idwal H. Edwards and Lieuts. Chester P. Gilger and John G. Fowler. Major Edwards was to note naval methods of operation, supply and tactics, while Lieuts. Gilger and Fowler were to report respectively on communications and navigational methods employed.

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MILITARY COMPETITIONS IN HAWAII

All organizations of the 5th Composite Group, Luke Field, T.H., were busily engaged in preparation for the Department Military Competitions, scheduled to commence on Monday, November 9th. The Group was to be represented in the following events: Pistol Firing; Recruit Drill; Personal Appearance and Equipment (two events); Tire Changing; Trouble Shooting and Appearance events for Group Transportation; Tent Pitching Competition; and three Air Corps events, consisting of High Altitude Bombing, Accuracy Landing Event and Reconnaissance Patrol Mission.

The 5th Composite Group was slated to compete specifically with the 18th Pursuit Group at Wheeler Field, however, in most of the events other than Air events. The representatives were to be judged in company with the entrants from all regiments located in the Hawaiian Department and there was a feeling of confidence in the Group that it would make a good showing.

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20TH PURSUIT GROUP MANEUVERS IN TEXAS

By the News Letter Correspondent

The 79th Pursuit Squadron, Barksdale Field, La., left their home station for Houston, Texas, on the morning of October 13th, to participate in maneuvers for the 20th Pursuit Group. En route to our Houston base, we joined the other two squadrons of the Group for rendezvous over Liberty, Texas, and a few minutes formation to protect the landing of the 77th Pursuit Squadron at Beaumont, Texas. Arriving at Houston, we found our mess sergeant and his crew very busy preparing a most welcome dinner. In spite of the thin layer of sand that found its way into all our eating utensils, the food served during our encampment was very good.

The city of Houston was our rendezvous nearly every evening. This busy city has many of the characteristics of a northern metropolis. It seems to lack that lazy atmosphere that so many of the southern towns are noted for. One restaurant in particular seemed to hold the interest of our lovers of fine foods. The oysters a la Rockefeller and the visible coffee maker were the main attractions.

The two other squadrons of the Group were stationed at Fort Crockett and Beaumont, Texas. After one of the daily Group problems, the 79th Squadron landed for fuel at Fort Crockett. The pilots took advantage of the situation and headed for a famous sea food cafe on the water front in Galveston. The oysters a la Rockefeller were not quite up to par according to the southern connoisseurs of fine fish foods.

Our problems, as a rule, were patrol missions. Several planes from this Group were detached to act as hostile aircraft. With one or two exceptions, the "enemy" was intercepted and attacked every time.

Our final problem was an attack on the 77th Squadron base at Beaumont, Texas, with the 55th Squadron acting as the support. After the attack, we landed and went into town as guests of a local flying club. The local flyers sponsored a dance to which all pilots of the Group were invited. From all reports, the dance was a huge success. The following day, Sunday, the Group passed in review for the townspeople of Beaumont and then returned to Barksdale Field.

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Plans have been completed for a new Instrument Repair building at the Hawaiian Air Depot, Luke Field, and it is expected construction will start in a short time.

TRANSPORTING WIRE FENCING BY AIR

Continuing its cooperation with local government authorities in such activities as sowing seed, etc., the 5th Composite Group, Luke Field, T.H., assisted the local forestry service in an experiment to determine the practicability of transporting and dropping a quantity of 100-pound rolls of wire at designated spots on the slopes of Mauna Loa, Hawaii.

It was the desire of the Forestry Department to build a long fence high on the southeast side of Mauna Loa to prevent encorachment of wild sheep and goats into the ranch lands below. Due to the dense undergrowth and rugged terrain, the problem of transporting the large quantity of wire and fence posts involved considerable difficulties. It was thought that a great saving of time and labor could be effected if the materials could be dropped from the air.

Accordingly, on October 19th, Lieut. D.N. Crickette, accompanied by 1st Sergeant L.N. Johnson, Sergeant James Asher and Private Albion Howe, flying in a Keystone Bomber and escorted by Lieut. R.W. Warren, who was accompanied by Mr. Tillett, of the Forestry Department, Corporal C.W. Cunningham and Private R.H. Platt, flying in an OA-3 Amphibian, proceeded to Hilo, Hawaii. Here the Keystone was loaded with six 100-pound coils of wire. Taking off early the following morning, in order to take advantage of good flying conditions, the Bomber dropped the wire on points marked by crosses of cheese cloth laid on the ground. The mission was completed in two hours, whereas, had it been done with trucks and pack mules, the only other practical method, it would have required at least two days. Prior to the return to Luke Field, the personnel of the flight were taken by the local foresters on a sheep hunting expedition on the slopes of Mauna Loa, and a total of 49 sheep and two pigs was killed.

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RESERVE OFFICERS HONOR GENERAL SIMONDS

On November 18th, the Los Angeles Chapter of the Reserve Officers' Association held a banquet in honor of the Commanding General of the 9th Corps Area, Major General George S. Simonds. The 479th Squadron (Reserve) was well represented at the banquet, Captain Pardoe Martin, Air Corps, Unit Instructor, heading the list.

"It was our first opportunity to meet the General, as he only recently took over command of the Corps Area," says the scribe for the 479th Pursuit Squadron, and he adds,- "First impression would indicate 'We'd like to see more of the General.'"

REPRESENTATIVE HILL VISITS KELLY FIELD

Representative Lister Hill, of Alabama, who is Chairman of the House Military Affairs Committee, conducted a tour of inspection of the Air Corps Advanced Flying School, Kelly Field, Texas, on November 15th.

With Mr. Hill were the following members of the party who are accompanying him on his extensive inspection of Army posts, viz: Colonel Adna R. Chaffee, General Staff; Colonel Shepler W. Fitz Gerald, General Staff; Major W.D.Persons, Office of Assistant Secretary of War; Lieut. Colonel W. O. Ryan, Air Corps, pilot, and Captain John W. Persons, copilot of the C-34 airplane the party is utilizing as the vehicle of transportation.

Brigadier General James E. Chaney, Commanding General of the Air Corps Training Center, accompanied the party from Randolph Field, where they had arrived on November 14th. They were met at Randolph Field by Major General Breese and Congressman Maury Maverick, in addition to a number of officers of the post. Colonel Arnold N. Krogstad joined the party when they arrived at Kelly Field.

Representative Hill was most interested in the housing needs of the local army posts, and during his stay in San Antonio he also inspected Fort Sam Houston and the San Antonio Air Depot, Duncan Field, in addition to Kelly and Randolph Fields.

The party departed from Randolph Field on November 16th for El Paso, Texas, the fifth stop on Mr. Hill's itinerary, given below:

Nov. 12 - Leave Washington for Maxwell Field, Montgomery, Ala.

Nov. 13 - Inspection of Field 8-9 a.m. Leave Maxwell Field 9:30 for Barksdale; lunch and inspection of field. Leave 2:30 p.m. for Fort Sill. Overnight.

Nov. 14 - Inspection of Fort Sill and Post Field, lunch. Leave 2:00 p.m. for Randolph Field, San Antonio. Overnight.

Nov. 15 - To Corps Area Headquarters by 9:00 a.m. Inspection of Fort Sam Houston; lunch, then to Kelly Field, Duncan Field, and back to Randolph Field. Overnight.

Nov. 16 - To Fort Bliss; lunch and inspection of Fort Bliss and Beaumont General Hospital. Overnight.

Nov. 17 - To March Field; inspection of March Field and Muroc Lake area by air and into Clover Field.

Nov. 18 - Los Angeles area (Fort MacArthur).

Nov. 19 - To San Francisco (Hamilton Field and Sacramento).

Nov. 20 - Corps Area (Presidio).

Nov. 21 - To Salt Lake (Fort Douglas) overnight.

Nov. 22 - To Denver (Fitzsimons General

Hospital and new Air Corps site). Overnight.

Nov. 24 - To Scott Field - inspection; to Chanute Field, lunch and inspection; and to Chicago, overnight.

Nov. 25 - Inspection of Fort Sheridan and after lunch to Fort Knox, overnight.

Nov. 26 - Inspection and to Wright Field - lunch Patterson Field, Overnight.

Nov. 27 - Fort Bragg and Maxwell, overnight.

Nov. 28 - Washington.

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The monthly Control Area supply and engineering conference and luncheon at the San Antonio Air Depot, Duncan Field, Texas, held on November 10th, was attended by seven officers of various Air Corps stations in the area and the officers of the Air Depot. Stormy weather at the time prevented a larger number of officers from flying in to attend.

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SOME FAST TRANSPORT PLANE

Colonel H.B. Clagett, Commanding Officer, Selfridge Field, Mich., and Captain Harlan T. McCormick, of that station, left recently for March Field, Calif., to accept one of the new Douglas C-33 airplanes.

"Selfridge Field has been in need of a faster transport plane for some time," says the News Letter Correspondent, and he then adds: "If the reports on the new Douglas are correct, it will be possible for the maintenance crews to service the planes before departure, board the transport, and arrive in time to take care of the combat planes as they arrive.

Sergeants Brock and Schaeffer, who will be assigned to the ship, are on their way to Santa Monica to receive instructions as to the upkeep and repair of the new ship."

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55th Pursuit at Shushan Airport

(Continued from Page 10)

engaged in ground gunnery training, with early morning and late afternoon firing featuring the program. Six pilots to date have completed record firing with the gratifying result of a temporary squadron average of over 800.

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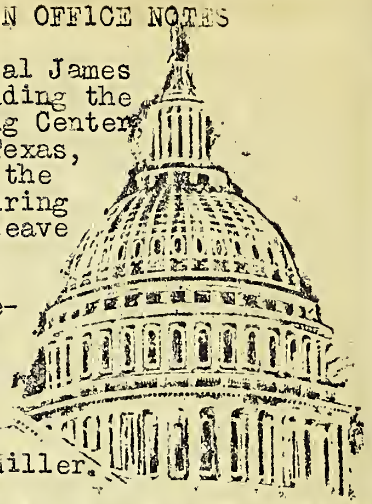
Recent visitors from Langley Field to Selfridge Field were Colonels Follett Bradley, Carl Spatz and Captain R.P. Williams. The last-named officer, who is the Meteorological Officer of the 2nd Wing, made a preliminary inspection of the Selfridge Field meteorological station. This station is to be expanded and, as soon as the enlisted personnel arefully trained, 24-hour service will be available.

WASHINGTON OFFICE NOTES



Brigadier General James E. Chaney, Commanding the Air Corps Training Center, Randolph Field, Texas, was a visitor in the Chief's Office during the course of a leave of absence.

Officers who departed on leaves of absence were Lieut. Colonel H.C. Davidson, Executive, and Major Lester T. Miller.

Recent visitors to the Chief's Office were Lieut. Colonel W.B. Wright, Air Officer, 5th Corps Area, Columbus, Ohio; Captain O.P. Weyland from the Advanced Flying School, Kelly Field, Texas; Captain Randolph Williams from Langley Field; Captain Robert W. Douglass, Jr., student at the Command and General Staff School, Fort Leavenworth, Kansas; Captain Claire Stroh, Instructor National Guard, Little Rock, Ark.; and 1st Lieut. Frederick R. Dent from Wright Field.

Officers returning recently from navigation flights were Major Alfred W. Marriner from Mitchel Field; Major James A. Mollison from Newark, N.J.

Major Lowell H. Smith, Chief of the Inspection Division, returned November 16th from leave of absence.

Lieut. Colonel William E. Lynd, Captains A.H. Foster and Donald F. Stace recently returned from temporary duty at Wright Field, Ohio.

Captain Robert V. Laughlin returned from temporary duty in New York.

Major William B. Souza returned from Mitchel Field, N.Y., following a ferrying mission. He ferried a new O-46 airplane from the Douglas factory at Santa Monica, Calif.

Major Malcolm C. Grow, Chief Flight Surgeon, returned November 17th from West Point, N.Y.

Captain Mervin E. Gross departed on November 23rd for Wright Field.

Lieut. Colonel Robert L. Walsh, Chief of the Reserve Division, returned November 15th from leave of absence.

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Eleven Air Reserve second lieutenants, now stationed at Hamilton Field, are under orders to sail about December 19th for duty with an Air Corps tactical unit in the Panama Canal Department.

FOREIGN OPINIONS ON PRESENT DAY AVIATION

In the first international issue of "ALA D'ITALIA" published in October, 1936, there are given the opinions of eminent men whose labor and genius contribute daily to the progress of aviation. Some of these opinions are quoted below, as follows:

ROUMANIAN UNDER SECRETARY, MR. CARANFIL

Would you like to know my opinion on some outstanding problems of today? Fighters must be single-engined and single-seater or twin-engined and multi-seaters? Which is best, heavy or light bomber? I consider that as regards war material the problems are many and complex and can be solved only through experience and by taking into account special conditions peculiar to each country and each military force.

The flying equipment of an Air Force depends on the strategical problems springing from the performance of the aircraft of the probable enemy; from the nature of the country that shall have to be crossed, from the ground organization that one can dispose of, from the possibilities afforded by the national industries and by its potentiality in war time. In recent years, thanks to research on applied aerodynamics, the rosiest previsions have been surpassed. It is not to be forgotten that in aviation, as in every other field of technics, the last word must be said by practical experience.

Let us then follow with interest the peculiarities and improvements of prototypes but let us also bear in mind that the best aircraft shall always be that which has been thoroughly tested in flight and is in the hand of crews that know to make the best use of it.

CHIEF ENGINEER G. GALASSO,

"Industrie Aeronautiche Romeo," Naples.

A definite statement as far as air and liquid-cooled engines are concerned is not possible. Either type had its periods of supremacy in the past. Actually the use of one or the other is still a question of which particular problems the plane has to solve. Anyhow it appears to me that owing to the heavy demand for higher speed, the liquid-cooled engine is going to come into its own again.

Wooden and mixed constructions have obviously to leave the aeronautical field too in favor of all-metal constructions. In those countries where metal's raw materials are largely available and powerful industries are more advanced this is already a well accomplished fact. Other countries will follow gradually as soon as the metal's industry and the aeronautical constructors get fully equipped. Aluminum and its alloys appears to have the best chances of success. Stainless steel is too heavy and expensive, magnesium has worse mechanical characteristics and does not stand corrosion as well. I think therefore their use will be limited to special component parts.

With regards to the monoplane-biplane controversy, it appears now to be certain that biplanes are going to disappear. Low wing monoplanes will hold a strong supremacy.

COMMODORE MANUEL A. FRANKE M.,

Chief, General Staff, Chilian Flying Corps.

What more characteristic developments can be expected for the Military Corps? The military aviation with all the characteristics reached up to date, namely, load capacity, firing and falling armament, speed, material used in constructions, regularity and power of the engines, instruments of navigation, etc., and with the inevitable future developments bound to the interest of technical men, will become the most important arm of the military forces of a nation. According to my opinion the most important improvements will come to us in the field of load capacity and flying range.

In regard to the problem of fighters whose tendencies now seem to be summed up in the three following solutions:

1. Single-engined, single-seater very fast and light with racing engine and light armament;
2. High speed twin-engined craft, with two three-seaters with average armament;
3. Heavy twin-engined craft with heavy and plentiful armament.

I must vote for the second solution with full confidence. Why? Because today as it is, the difference of speed between the most modern craft of that type and the fighters is very little, and if the chief characteristic of mobility remains for the latter, on the other hand and in regard to the power of fire, the scale turns markedly to the part of the twin-engined. It is true that fighters are now being armed with small 20 millimeter guns and no longer with machine-guns alone, to make their attacks more efficient in this way. But also the twin-engined craft can carry small guns, and if on one hand they have an aim of lesser importance (the fighter), on the other hand they have a distinct advantage of greater fire power. The question deserves the greatest theoretical and practical discussion. Personally and on the basis of facts, I am sure that the double engines are the best solution, however.

It is difficult to judge if the war efficiency of the large twin or three engined big bombers large formations is better than that of the light single-engined craft separately at the aim. That requires a discussion either too ample or too limited. For the time being I will be satisfied with the latter to say what is most essential. A modern light bomber can carry 500 kg. of shells at a speed varying from 380 to 420 km. p.h.; a modern heavy airplane from 1500 to 2000 kg. at a speed of 280 or 300 at the most. It will be seen that there is a considerable difference in weight and speed. Now the war efficiency of these two types of craft, besides what they have given, depends on many other elements, some of which are difficult to estimate, such as weather, the vastity of the aims, the geographical configuration of the zones, the state of the operations, the situation of the material in general, etc., etc. Probably a clear distinction does not exist, and both types can have their highest efficiency for different kinds of use.

PROSPERO GIANFERRARI

Chairman, Assn. of Italian Aircraft Constructors

Shall I express my opinion upon the developments of the struggle between the two types of engines which are contending each other the aeronautical supremacy? The task is a difficult and ungrateful one, but today more than ever these subjects must be clearly considered and backed by experience. Air cooled engines and liquid cooled engines will continue in contending the preference of high military chiefs, of aircraft designers and airlines' operators. But it appears certain that the watercooled engine is actually enjoying a period of particularly good achievements and whilst 1936, a very interesting year for aviation, is nearing the end, we have to agree that it is also going to suppress and perhaps to reverse the numerical supremacy of its opponents, at least as far as great powers' units are concerned.

What are the reasons? There are many. Above all the high altitude flying problems which are getting day after day more impelling and which Italy is actually largely experimenting. For high altitude exigencies the water cooled engine is better suited and gives better guarantees of good running. The lowering of temperature does not compensate to the cooling effects the diminution of density and consequently the diminution in weight of the air which gets in contact with the surfaces to be cooled. To stand this drawback, water cooled engines can be fitted with wider variable surface radiator. Whilst nothing of that kind has yet been developed for air cooled engines. Moreover, with engines of the latter type it is not possible to place the carburetors after the supercharger and so avoid the increase of admission temperature which means a diminution in weight of the air-gas mixture getting inside the cylinders. It is also very clear that water cooled engines can more easily support the overload imposed by heavy take off, by take off from torrid zones, and when multi-engined machines are concerned, by flying with one or more engines dead.

A complete examination of these problems would be too long, but in my opinion the above mentioned remarks when added to the important factor of the ever increasing speed exigencies, explain well enough the reasons of the particular preference which, during 1936, high performance prototypes have proved in behalf of liquid cooled engines. There is also to be considered that the Americans, who were highly responsible for the last ten years predomination of radial engines, have just this year started a careful study of the best European water-cooled engines in order to rebuild their experience on the subject. It will be wise to pay the best attention on every further development.

F.S. SIGRIST, Director Manager of the Hawker Aircraft, Ltd., Kingston-on-Thames, Eng.

I think for the great majority of aircraft construction will be all-metal or metal with fabric covering. There will be a scope, for a few years at least, for the light type of private owner machine in a combination of wood metallic construction. Undoubtedly there will be big development in the increasing use of stainless steel and light alloys, particularly the magnesium light alloy. Each has advantages and each has its adherents in the constructional field.

The future development will really, I think, depend upon the national point of view and the designing firms concerned. In some countries where the national production of light alloys is predominant that type of material will be used. In other countries where the basic industry is steel the stainless material will naturally receive first consideration. All circumstances being equal, there is no objection to a mixed construction, providing the necessary precautions against corrosion by electrolytic action are taken.

I believe that with the increase in engine power and the consequent increase in aircraft performance that the monoplane will be the prevailing type of machine of the future and that the production of the biplane, except perhaps for special purposes, will rapidly decrease.

REGINALD J. MITCHELL, Director and Chief Designer at The Supermarine Aviation Works

It is always very difficult to prophesy what developments will take place in the future, particularly in connection with aviation. Greater development depend on so many items other than the purely technical aspect. If designers could be given a free hand to carry out their own ideas, and were not handicapped by national and commercial considerations I feel sure that progress would be very much more rapid.

As the speed radio of the most efficient airplane of today is about 6-1, there is a great deal progress to be made before this is increased to 10-1. In fact, I can not foresee at present how this is to be done, as it will mean putting up the speed of the airplanes to at least 700-800 miles per hour. This may be practicable in several years' time as a purely stunt performance, but I think it will be very many years before it will be attained on an airplane which can be used for practical purposes.

Reaching a 1:3 ratio between empty and full load weights is to my mind a much simpler proposition. The use of heavier wing loadings with landing flaps and catapulting devices together with more efficient methods of construction and improvement in material will soon bring this ratio well within reach.

I am a very firm believer in composite methods of construction and I think composite construction will come into its own again very rapidly in place of the all-metal construction which is at present very popular. A composite construction of wood and metal enables a design to be got out much quicker and will provide a very much cheaper and quicker production. I am of the opinion that in the case of national emergency, when it is essential to turn out aircraft with great speed and as cheaply as possible that composite construction will be universally employed. Finally I am of the opinion that the liquid-cooled engine will always give a little better speed in very fast aircraft.

AIR CORPS NEWS LETTER

Christmas Greetings

ISSUED BY
THE OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT WASHINGTON, D.C.
DECEMBER 15, 1936.

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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation. Oo---

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GREETINGS FROM THE CHIEF OF THE AIR CORPS

It affords me extreme pleasure to extend, through the columns of the Air Corps News Letter, my sincere wishes to all Air Corps personnel for a very Merry Christmas and a Happy and Prosperous New Year.

This coming Christmas marks the first anniversary of my tenure of office as chief of the Air Corps, and I am glad of this opportunity to express my warmest appreciation for the loyalty and wholehearted support and cooperation which have been extended to me.

This past year, it seems to me, has been one of the most interesting in the history of the youngest combat branch of the Army. Extraordinary developments in aircraft performance have forced us to change the heretofore existing organization, both from administrative and tactical standpoints, and to create new organizations with new functions to perform.

The rapid changes in aircraft development and all the other changes incident thereto make us all realize that we belong to a branch of the Army of the United States in which our energies can never be relaxed, and in which we continually face new problems - problems for which we must promptly find a solution in order to be ready for any emergency which may confront us.

In the past the Air Corps has been a small but highly efficient arm. The high degree of efficiency attained by our personnel - officers, enlisted and civilian - is particularly gratifying to me and to all connected with American aviation. Recently, some personnel increases have been made and a large increase in the airplane strength has been authorized. These make this Christmas particularly happy for the Army Air Corps, and bright prospects for a larger and better equipped Army aviation foreshadow a Happy New Year for all.

O. WESTOVER,
Major General, Chief of the Air Corps

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GREETINGS FROM THE CHIEF OF THE G.H.Q. AIR FORCE

The approaching holiday season, with its attendant reduction of training activities, affords an excellent opportunity to reflect on past accomplishments and to plan for the future.

The past year and a half has been a period of high pressure thought and work on the part of the entire Air Corps. Many of the problems of training, equipment and organization, created by the formation of the GHQ Air Force on March 1, 1935, have been solved. For others, a solution is still being sought.

I wish to express to all personnel of the GHQ Air Force my sincere appreciation of the splendid manner in which they have met and solved the problems with which they have been confronted. I thank the Materiel Division, the Tactical and Technical Schools, the Training Center and all other agencies of the Chief of the Air Corps for their fine spirit of helpful cooperation.

To members of the GHQ Air Force, past, present and future, in other words to the entire Air Corps, best personal wishes for a Merry Christmas and Successful New Year.

F. M. ANDREWS,
Major General, Air Corps, U.S.A.,
Commanding.

ROUND TRIP FLIGHT TO PANAMA

By the Langley Field Correspondent

The 21st Reconnaissance Squadron Avigation Section, on November 15th, completed one of the most interesting and instructive flights that has been made by an avigation unit. With a Douglas OA-5 as the vehicle of transportation, the flight was made from Langley Field, Va., to France Field, Canal Zone, via Miami, Florida, and return over the same route. Miami was the only intermediate stop on the outward and return journeys.

The following personnel participated in the flight, and were assigned to duties as follows:

Major V.J. Meloy, Flight Commander and Navigator.
Captain H.C. Downey, Navigation and Engineering Officer.
Captain A.Y. Smith, Instructor.
1st Lieut. D.R. Gibbs, Navigator.
1st Lieut. E.L. Tucker, Navigator and Communications Officer.
1st Lieut. J.A. Miller, Instructor.
Staff Sergeant W.B. Buff, Crew Chief.
Private, 1st Class, K.E. Trout, Radio Operator.

Major Meloy, Captain Downey and 1st Lieuts. Gibbs and Tucker are completing the present Navigation Class at Langley Field.

Excerpts from the log of the flight are as follows:

Take-off from Langley Field, Va., at 0912 November 9th.

Landed at Coast Guard Station Miami at 1530, where the flight remained over night. The distance from Langley Field to Miami was 820 Statute miles, and was made direct.

Tuesday, November 10th, with 1200 gallons of gasoline aboard, the ship got into the air at 0749 and headed south on the 1125-mile stretch to the Canal Zone. Point Colorados, Cuba, was passed at 0958, and the long trek across the Caribbean began. As this is the rainy season in Panama, it was expected that tropical showers would be encountered, but the sun and Dame Fortune smiled, and the Canal Zone was reached at 1645 without encountering anything but an unlimited ceiling. Due to a cross wind at France Field, the ship was landed in the water and taxied up the ramp at the adjoining Naval Air Station.

Maintenance was begun on the ship the following morning, and on Thursday afternoon the ship was flown to Albrook Field, so that the Army officers stationed on the Pacific side might inspect the airplane. On Friday, 13th, the ship returned to France Field and was fully serviced for the take-off the following day.

November 14th, the take-off was made at 0824 from Limon Bay. Some difficulty was experienced in getting off due to the heavy load and glassy water with no wind. A few showers were flown through on the return trip, but otherwise the trip was uneventful. Landing was made at the Coast Guard Station at Miami, Fla. at 1732. The following morning, the ship took off for Langley Field, Virginia, at 1007 and landed at 1645.

On the flight, the four students alternated as Dead Reckoning and Celestial Navigators, and everyone took his turn as pilot. The navigation was successful, as each objective was reached with an average error of less than one degree.

The reception accorded the personnel of the flight in Panama proved the intense interest in modern aircraft in the Canal Zone. Not only the Air Corps, but all branches of the service were greatly interested in the airplane and in the success of the flight. Everyone in the Canal Zone seemed to be "Air Minded".

During the flight from Langley to Miami, radio contact was maintained constantly with either Langley Field or the Coast Guard until Quarry Heights was picked up. It was interesting to note that contact was made by voice with Albrook Field on the return trip when only 150 miles from Cuba, or a distance of 720 miles. Contact was maintained with Quarry Heights until landing at Miami.

The personnel of the flight are greatly endebted to the personnel in the Canal Zone who worked unsparingly to make the flight a success. Particularly are they indebted to Major General W.B. Butner, Brig. Gen. George H. Brett and Lt. Col. Richard Ballard.

In Miami, the assistance rendered by Commander Von Paulson, in command of the Coast Guard Station was invaluable. Pan-American Airways cooperated to the fullest extent by giving accurate and timely weather reports to the Coast Guard and Army stations in contact with the plane, so they could be relayed to the ship in flight.

This flight was particularly instructive to the navigation students, as it gave them ample opportunity to navigate on long stretches with no check points. Only 456 miles of the total distance flown of 3890 miles were over land. The ship functioned perfectly at all times and everything in connection with the flight worked with precision, thus insuring success all the way around.

The most amusing incident of the flight was the sudden realization that there were four persons in the front gunners' compartment as the ship neared Panama. Eight pairs of eyes are still recovering from the strain of searching for land when it was known land was near.

MILITARY COMPETITIONS IN HAWAIIAN DEPARTMENT

In the week of November 9th, all units of the Hawaiian Department were engaged in the Hawaiian Department Military Competitions, an annual event inaugurated this year by Major General Hugh A. Drum. The 18th Composite Wing, represented by its components, the 5th Composite Group, Luke Field, and the 18th Pursuit Group, Wheeler Field, participated in military events in competition with other organizations in such activities as recruit drill, tent pitching, personal appearance and equipment events, and events for motor transportation. In addition, there were a number of Air Corps flying events. As a result of these competitions, the Air Corps in Hawaii enjoys the satisfaction of having beaten many of the other outfits at their own game.

When the final percentages were published, it was found that the 5th Composite Group had to defer to the 18th Pursuit Group with their splendid score of 98.8%. However, the 5th Composite Group, with a score of 91.1%, forced the "Pursuiters" to extend themselves to the utmost.

Although the Group from Wheeler Field excelled in the parade ground events, the 5th Composite Group distinguished itself by beating the entire Hawaiian Department in the pistol firing competition. The Luke Field team, headed by 1st Lieut. Carlyle W. Phillips, included Sergeants S.D. Peters and T.F. Taylor, Privates J.H. Purnell and Paul H. Louden. It defeated seventeen other competitors to take the match. Private Loudon, who is serving in his first enlistment, turned in the second highest individual score in the competition with a score of 187 out of a possible 200.

Turning to the Air Corps Events, Luke Field's interest was centered in Event 46 - "High Altitude Bombing" and Event 52 - "Reconnaissance for Observation Squadrons." The former was conducted at Waimanalo, where a target, base line with end observation stations, and an operations tent housing long and short wave radio sets and field telephones had been set up. The competition was run according to the rules of T.R. 440-40 (tentative) and served as a service test of the latter. The winning team proved to be 2nd Lieut. Cady R. Bullock, Air Reserve, pilot, and 2nd Lieut. Fred C. Johnson, Air Reserve, bomber, both of the 72nd Bombardment Squadron, with a score of 13.8 mils. The bombing altitude was 10,000 feet.

The 23rd and 72nd Bombardment Squadrons were each represented by three teams. Of the six teams, the 72nd Squadron took first, second and fourth places. The result might have been different had not 2nd Lieuts. William C. Capp and Norman L. Callish, Air Reserve, been forced to withdraw due to a defective bomb sight after dropping only three bombs. Due to the late hour, it was not practicable to allow them to repeat.

The Reconnaissance event was hotly contested and afforded elements of suspense and excitement. On the morning of the contest, the Pursuit Group, by arrangement, distributed a number of Pursuit and Attack planes on certain of the outlying fields on Oahu. A number of these airplanes were elaborately camouflaged. Others were left "in the clear." The mission was to reconnoitre these fields and on return submit a written report of the number and type of airplanes observed. One hour was allowed to complete the mission. For each minute over the hour, a penalty was assessed. Radio was injected with the problem by requiring each team to report their position at a certain time in accordance with the latest prescribed radio procedure. The event was won by the team consisting of 1st Lieut. Carlyle W. Phillips, pilot, and 1st Lieut. Cordes F. Tieman, observer, both of the 50th Squadron, who missed a perfect score only by failing to report two of the thirty airplanes involved. First Lieut. Charles F. Born, Commanding Officer, 50th Observation Squadron, takes great satisfaction in the fact that his Squadron took first, second and third places in this event.

The only air event in which Luke Field came into direct conflict with Wheeler Field was Event 49 - "Accuracy Landings." In this event, each Pursuit, Attack and Bombardment Squadron (Observation omitted) were allowed to enter three teams. The object was to stop with the tail wheel on the center of a circle after a glide from 1,000 feet with power off. First Lieut. H.L. Sanders, 6th Pursuit Squadron, was the winner, missing the center by a scant one inch with his "pea shooter." However, Luke Field is proud of the performance of 1st Lieut. William L. Travis, who stopped his five-ton Keystone B-4 within 5½ inches of the pin. It is rumored that the Wheeler Field "Pursuiters" greatly simplified the problem by adjusting the idling speed of their motors so that the P-12E's rolled indefinitely, it remaining for the pilot only to judge the correct moment for "standing on the brakes."

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Three Air Reserve officers were assigned to active duty extending into the year 1939; 2nd Lieuts. John Cushman Doherty, Fort Lewis, Wash., to December 6th of that year; John Harold Turner, March Field, Calif., to June 15th, and Richard Charles Kugel, Hamilton Field, Calif., to June 16th.

THE CONTROL TOWER AT MITCHEL FIELD

The News Letter Correspondent from Mitchel Field, L.I., New York, has submitted several photographs showing the location and construction of the Airdrome Control Tower now in operation at the 2nd Air Base, at that field. It is regretted that the press of other work now being performed by photographic personnel in the Chief's Office will not permit reproductions of these photographs to be made in time for inclusion in this issue of the News Letter.

The necessity for an adequate control tower, capable of regulating air traffic arriving at or departing from this Base was early recognized. Accordingly, the dispatching of local air traffic was undertaken in a modest manner through the medium of a radio installation in the office of the Base Operations Officer. While this arrangement proved its worth, it was at once apparent that a more efficient set-up was quite necessary effectively to carry on this extremely important activity. Thus, from a humble beginning, a control tower worthy of the name now graces the roof of Base Headquarters Building.

The Tower was placed in operation November 10, 1936, with operating personnel maintaining continuous 24-hour watch with radio receivers tuned to the following frequencies - 3105 kc's, 6500 kc's, 6625 kc's (day) - 3295 kc's (night) and transmitters operated by remote control on 278 kc's for airdrome control and 396 kc's for the dissemination of weather data.

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AERIAL GUNNERY PRACTICE AT CAMP SKEEL

The 27th Pursuit Squadron, stationed at Selfridge Field, Mt. Clemens, Mich., recently spent three weeks at Camp Skeel, Oscoda, Mich., where it indulged in gunnery practice. This practice consisted in firing on ground targets and on aerial tow targets above 10,000 feet.

This was the first opportunity the 1st Pursuit Group has had to observe the firing qualities of the new PB-2A airplanes, and from a mechanical standpoint they performed excellently. The high altitude gunnery was very successful. No flexible guns were available on the planes for practice by the gunners, but they were trained on the ground by firing several thousand rounds. The personnel found ample recreation in athletics and fishing, and all personnel of the Squadron agree that the work at Camp Skeel had been both interesting and instructive.

The 94th Pursuit Squadron, during the month of October, also spent three weeks at Camp Skeel participating in gunnery practice.

THE PHILIPPINE ARMY AIR CORPS

About 33-1/3 percent of the Philippine Army Air Corps was recently rendered inactive when a student pilot cracked up one of their three planes, a Stearman Trainer. The pilot, however, was only slightly injured, and the plane was not damaged beyond repair.

The task of organizing and training the Philippine Army Air Corps is in the hands of 1st Lieuts. William L. Lee and Hugh A. Parker, U.S. Army Air Corps, who are, in addition to their other duties, assigned to duty in the office of General Douglas MacArthur, Military Advisor to the Commonwealth of the Philippines. Lieut. Lee is Acting Chief of the Philippine Army Air Corps, with Lieut. Parker his assistant. They have about 85 student pilots.

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PURCHASE OF ADDITIONAL TRAINING PLANES

The Secretary of War, Hon. Harry H. Woodring, recently announced the award to the Stearman Aircraft Company, Wichita, Kansas, of a contract for 28 Primary Training airplanes and a reasonable amount of spare parts. This purchase is to be made by an increase in a contract already let to this company at a total additional cost of $146,720.25. This additional procurement of training airplanes is made to fill an urgent requirement for this type of airplane at the Air Corps Training Center, and purchase at this time by exercise of option permits of a saving of approximately $620 per airplane on total contract.

The desired performance characteristics of a primary training airplane for the Army Air Corps are: comparatively low landing speed, high speed of 125 miles per hour, operating speed of 105 miles per hour, with an endurance of 4 hours at such operating speed, and climb to 18,000 feet in 18 minutes with full load.

The type purchased is the PT-13A, which is a two-place (tandem arrangement) biplane, powered with a 7-cylinder air-cooled Lycoming engine of 125 horsepower. This airplane has been judged by Air Corps personnel as exceptionally well suited to the fundamental training in flying given at the Air Corps Training Center.

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NEW TRANSPORT PLANE FOR SELFRIDGE FIELD

Selfridge Field received a new C-33 Transport on November 23rd. It was flown to that field from the Douglas Plant by the Post Commander, Colonel H.B. Clagett, and Captain Harlan T. McCormick.

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Major General Frank M. Andrews, Chief of the GHQ Air Force, visited Selfridge Field November 23rd, leaving on the 25th.

LONG-DISTANCE FLIGHTS TO MANILA
By the News Letter Correspondent

AS Manila was the terminal of several flights of interest during September and October, a brief account of each of them is submitted.

A "SHORT-Singapore" flying boat of Squadron 205, British Royal Air Force, Singapore, Malay Peninsula, powered by four Rolls-Royce engines mounted in tandem pairs, landed on Manila Bay at 1:40 p.m., September 25th, after a flight from Singapore via Hongkong. The flight from Hongkong to Manila was made that day, the start being made at 6:00 a.m.

The boat carried a crew of three officers and six enlisted men. The following officers were aboard: Air Commodore Sidney W. Smith (in command), Group Captain A.H. Peck and Squadron Leader G.S. Riccard. The return flight was made via Kudat, Borneo, over the Southern Philippine Islands and British North Borneo, taking off from Manila Bay on the morning of September 29th. During their stay in Manila, the officers were quartered at the Army and Navy Club, and were entertained at several functions by the British Consul, officials of the City of Manila, the Commonwealth of the Philippines and the officers of the Air Corps. The enlisted men were quartered at the Army and Navy Y.M.C.A. On the evening of September 28th, they were entertained by the Air Corps noncommissioned officers at a dinner at the Great Eastern Hotel.

A Douglas DC-2 airplane of the Royal Netherland Indies Airways (KNILM) landed at Nichols Field on the afternoon of October 10th, after a flight from Batavia, Java, via Balikpapan, Borneo and Zamboanga, P.I., carrying Mr. H.R. Ekins of the Associated Press as passenger. Mr. Ekins was at the time participating in a race around the world via commercial airlines with two rival newspaper representatives - Miss Dorothy Kilgallen and Mr. Leo Kiernan. Mr. Ekins, after several days' delay at Manila, was able to make connections with the Hawaiian Clipper, thereby completing his around-the-world flight far in advance of his competitors. In addition to Mr. Ekins, the members of the crew and other passengers were Mr. Van Breman, in command; Mr. Waltman, 2nd Pilot; Mr. Proost, Mechanic; Mr. Souman, Assistant Mechanic; Mr. Van Ende, Radio Operator, and Mr. N. Nieuwenhuis, General Manager of the line, and Mr. De Bree, Assistant Manager.

The flight was in the nature of a survey preliminary to the establishment of a line between Manila and the Netherland East Indies. During their stay in Manila, several flights were made over that city and vicinity, carrying Philippine Government officials and others. The return flight was made via the same route, carrying several local citizens as passengers from Manila to Zamboanga, P.I.

The Pan American Airways during the month of October made several preview flights, carrying newspaper representatives, Pan American Airways officials and representatives of American business and society. Three Clippers were in the air on October 18th, two headed toward Manila and the other returning to Alameda, all of them carrying passengers on preliminary flights preparatory to the establishment of regular commercial passenger service, October 21st.

The China Clipper, with eight newspaper men aboard, was enroute from Guam to Manila. The Hawaiian Clipper, carrying Mr. H.R. Ekins, was enroute from Midway to Honolulu, and the Philippine Clipper was enroute from Honolulu to Midway. The Philippine Clipper on the last of P.A.A.'s preview flights arrived at Manila on October 20th, with a distinguished group of 15 passengers, including Mr. and Mrs. Juan Trippe, Mr. and Mrs. Cornelius Vanderbilt Whitney, C.G. Grosvenor, E.O. McDonnel, Robert Lord, Senator and Mrs. McAdoo, Amos G. Carter, Roy W. Howard, Paul Patterson, E.R. Swasey, Thomas Backe and James G. Stahlman, and took off again at 6:00 a.m., October 23rd, with J.H. Tilton in command on the first flight to Macao, China, the far east terminus of the P.A.A., carrying the same passengers who were aboard on its arrival in Manila and, in addition, the following P.A.A. officials: H.M. Bixby, John Morris, Karl F. Lueder, Brooks Tatum and O.R. Butler, and a crew of seven, or a total of 27 passengers.

The Clipper was scheduled to return to Manila, via Hongkong, on October 24th. Captain John P. Van Zandt, Air Reserve, and formerly a 1st Lieutenant in the Air Corps, Regular Army, is at present acting as local manager of the Pan American Airways in Manila, and is attached to the 4th Composite Group at Nichols Field for inactive duty flying. Captain Van Zandt resigned from the Air Corps in January, 1926.

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Colonel Adna R. Chaffee, General Staff Corps; Lieut. Colonel Shepler W. Fitz Gerald, Air Corps (General Staff); Lieut. Colonel William O. Ryan, Air Corps, and Major Wilton B. Persons, Office of the Assistant Secretary of War, accompanied the Sub-Committee of the House Military Affairs Committee on its inspection of Scott Field, Ill., on November 25th.

On Nov. 27th, 1st Lieut. Filberto Mendivil Gomez, of the 1st Aero Regiment, Mexican Army, visited Scott Field by plane.

AND WAS THE MAJOR GLAD TO GET HOME!

The Correspondent of the 37th Attack Squadron, Langley Field, Va., spins this yarn, characterizing it as a very amusing incident and one that should be told.

He goes on to say that several months ago, during the Second Army Maneuvers, the 37th had four planes participating therein to lay a smoke screen at Fort Knox. Among the planes not taken on maneuvers was number 84, an A-8A, the only one of its kind in existence. The difference between the A-8A and the regular A-8 was a geared Conqueror motor that sounded like a coffee grinder and the plane consequently took about twice as much field on take-offs. The 37th had just received a new Cadet from Kelly Field and, being ordered on his orientation flights during this time, of course drew the old coffee grinder for his flights. To qualify for further cross-country trips, the new pilot must include in the orientation flights Fort Bragg, Richmond, Bolling Field, Middletown, Edgewood Arsenal and Mitchel Field.

The day this young man was sent to Mitchel Field, someone from GHQ called the 8th Pursuit Group and asked if they had a plane available to go to Ithaca, N.Y., to ferry back a certain Major from GHQ. Noticing that the 37th Squadron had a plane enroute to Mitchel Field with an empty rear seat, the Pursuit Group Operations called the 37th and asked if there were any objections to sending the plane to Ithaca to pick up a passenger and, of course, there were no objections.

The officer waiting at Ithaca is a very close friend of the C.O. of the 37th Squadron, and when the A-8 loomed in sight he felt very pleased inwardly that his good friend was coming to pick him up, not realizing that the Second Army Maneuvers had taken him away. Imagine his surprise after the plane landed to see a big red-headed youngster crawl out. This is the point where the Major made his mistake, because he should have crawled in the rear seat and said "Let's go!" Instead, he asked where the C.O. of the 37th was and why he didn't come after him.

Without stopping for a breath between words, this is the answer he received:

"The C.O. of the 37th is on maneuvers with all the good airplanes in the organization; they gave me this old coffee grinder to make my familiarization flights in because it was not good enough to go on maneuvers and I just graduated from Kelly Field."

The young man then got out the tools, tightened up the Prestone pump which was leaking quite badly, and was ready to start. The return to Langley was made without difficulty and, even though the young man made a successful landing down wind at Langley, the Major was so glad to be down that I do not believe he noticed it.

BOLLING FIELD HAS EDUCATIONAL FACILITIES

Despite occasional complaint to the contrary, an enlisted man in the Army finds leisure time on his hands, to dispose of as he may see fit. Enlisted men in the Air Corps make good use of their own time in various ways, according to their particular fancy,- in athletic sports, in music, in traveling, in extensive reading and in studying for some scholastic achievement. A like variety can be found at nearly any place where a group of men are quartered.

At Bolling Field there is a particular tendency of the men to achieve a higher educational standing. The educational facilities in the City of Washington offer opportunities that are hard to turn away, and any spare time can be put to good use by those who have a desire to better themselves. Washington schools offer classes both day and evening, primarily for the benefit of government workers, and they cover practically every field of knowledge and are of high standing. Every year an average of about fifty men from Bolling Field enroll at various schools in the city, some in day classes, but the majority in evening classes, according to their hours off duty. Of that number, a large percentage take up the study of law. Next in line come stenographic or business courses, a few in music, others in commercial art, in commercial radio, or in accounting. Some pursue a regular college course toward a degree at George Washington University or at Georgetown University, and others continue high school courses where they left off before joining the service, or review before going to a higher education.

Through these advantages, the enlisted men at Bolling Field are daily raising their educational standard, and thereby their social standard, and are better prepared to keep up with the technicalities of their work and the opportunities of modern times.

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RESERVE OFFICERS ENTER CIVIL AVIATION

Recently, Lieuts. G.C. Nye and J.F. Lumsden, Air Reserve, were relieved from active duty with the 96th Bombardment Squadron to accept positions with the American Airlines. Lieut. B.J. Pearson was also relieved from active duty to go with the Boeing Aircraft Corporation, Seattle, Washington. Although sorry to see them leave the service, the Squadron extends to these Reserve officers wishes for the greatest success in their new positions.

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Second Lieut. Claire Barton Collier, Air Reserve, of San Antonio, Texas, was ordered to active duty for a period of three years, effective December 7th, and for station at Brooks Field, Texas.

GOOD OLD ARMY CHOW

By the Langley Field Correspondent

DESPITE intensive recruiting by the Recruiting Officer at Langley Field, Va., in conjunction with recruiting stations throughout the 3rd Corps Area, thus leading to the enlistment of a number of suitably qualified men for the GHQ Air Force, Langley Field is still under-strength, due to the heavy concentration of discharges during the past three months. Those who may be due for discharge in the various other arms of services, and who may have been refused admission in the Air Corps because of lack of vacancies at the time of their enlistment, should apply now while recruiting is still open.

At no time has the GHQ Air Force offered such highly technical and specialized training in the various trades as at present. There are ten different and interesting trades being taught at Chanute Field, Illinois, and Fort Monmouth, New Jersey, these in addition to the courses offered at Fort Monroe, Va., and Fort Meade, Md. The courses at Chanute Field are all complete and are equivalent to the same courses offered in civilian life which extend over a period of two years.

All these schools are available to the young man in the Air Corps at Langley Field. An Air Base School will be instituted at Langley Field on January 4,1937. Despite the fact that possibly 50 or 60 men leave the Langley Field Air Base every year to attend a service school, the Commanding Officer desires to turn out three or four times that amount of trained men every year, in keeping with the GHQ Air Force policy of having every man a trained specialist. The courses to be instituted at Langley Field are to be of six months' duration, and consist of the following:

1. Meteorology Course.
2. Woodworking Course.
3. Armorers' Course.
4. Airplane Mechanic's Course.
5. Radio Mechanic's Course.
6. Welders-Sheetmetal Workers Course.
7. Ignition and Battery Course.

And now we come to the subject heading this article.

Several weeks ago, a young man applied for enlistment at Langley Field and, upon examination, he was informed that he was 13 pounds underweight for enlistment.

The boy's apparent willingness and determination convinced the Personnel Officer that here was a case that needed his personal supervision. Contacting the "Top Kick," of the 1st Air Base Squadron, he requested that this boy be allowed to quarter in his organization for a week or two, and that he be given special attention in the mess hall.

Evidently the plan worked, for it was but a fortnight later that, upon a re-examination, it was disclosed that the applicant had gained the required weight, 13 pounds, and his enlistment was accomplished.

The moral to this story is:
Eat Army chow - you can't get anything better.

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THIRD ATTACK GROUP WINS COLOMBIAN TROPHY

The Third Attack Group, commanded by Colonel Earl L. Naiden, Air Corps, stationed at Barksdale Field, Shreveport, La., won the Colombian Trophy for greater safety in flying than any other similar organization in the Army Air Corps.

This Trophy was presented with appropriate ceremony to the Group December 9th, General Andrews, Commanding General of the GHQ Air Force, flying to Barksdale Field especially for that purpose.

This Trophy was presented to the Air Corps by the Republic of Colombia, and is awarded annually to that Air Corps Group which during the preceding year has had the smallest number of accidents per flying hour.

The Colombian Trophy was presented to the United States Army Air Corps by the Republic of Colombia in order to cement more thoroughly the spirit of friendship between the two American Republics and to express the feeling of comradeship which always exists between fliers of all nations.

The Trophy was brought to this country last year at the time of the Miami Air Races by a delegation of Colombian Army pilots, headed by Major Benjamin Mendez, Colombian Air Force, who is a graduate of the United States Air Corps Training Center at San Antonio, Texas, and who has also attended various Army schools in the United States.

The rapid advances in the speed and the greater complexity of modern military aircraft require unusual care by all those connected with aviation to prevent accidents, and it is most fitting that the organization which has achieved the greatest safety should be publicly honored by the presentation of such a Trophy.

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A new Reserve unit, the 328th Observation Squadron, composed of San Antonio Air Corps Reserve officers, was recently organized, with Lieut. Colonel Jack H. Lapham in command. Major Winfield S. Hamlin, Air Corps, has been appointed as instructor of the new unit. Three new type basic training planes and three primary training planes will be assigned to the unit for the training of the Reservists at Brooks Field, Texas, once or twice a month.

THE 18TH RECONNAISSANCE SQUADRON, GHQ AIR FORCE

By the Mitchel Field Correspondent

EXPEDITED by the War Department order for reorganization of Air Force Units on September 1, 1936, the 18th Reconnaissance Squadron pushed aside the last retaining threads of its cocoon and spread its wings towards Mitchel Field's horizon. True, there had been other "18th Squadrons;" none, however, with the Raison d'Etre of this healthy, fast developing infant predestined to be the long range magic eye for its powerful and prolific brothers, the bombers.

Turning back the pages of history, we find the first "18th" was organized at Rockwell Field in 1917. It was designated the 18th Land Training Squadron and was charged with developing into war birds those adventuresome lads who were bound and determined to fight the war with the whole sky as a battlefield. In 1919, with the war ended, the "18th" which had, meanwhile, been rechristened Squadron "B," folded its wings and was demobilized. During the unsettled period following the War, the 18th Observation Squadron was reorganized at Rockwell Field, and carried on the young but enthusiastic spirit of the Air Corps from 1921 to 1925, when it was demobilized.

Not long afterwards, the 18th Observation Squadron took root on the Atlantic side of the continent; not, however, as the 18th Observation, but as the 18th Headquarters Squadron at Bolling Field. The last vestige of these old "18th's" disappeared on March 31, 1928, when the 18th Squadron was rendered inactive and attached to the 8th Corps Area. And so, after eight years of slumber, we find the numerals "18" once more taking wing, this time with broader and rosier horizons than ever before.

Of the illustrious officers and men of these earlier "18th's," chief, perhaps, is Major General Mason M. Patrick, whose own coat of arms was used as the foundation of the insignia of these earlier organizations; a winged foot of Hermes on a shield of azure, representing speed and service.

Although backed by years of tradition, the 18th Reconnaissance Squadron, organized at Mitchel Field on September 1, 1936, has had, to all intents and purposes, a scratch start; that is to say, it has plenty of tradition behind it, yet it is unhampered by tradition. With the increase in range and effectiveness of modern Bombardment, a new and yet untried reconnaissance unit was made a practical necessity. Chief among its accomplishments must be the ability accurately to locate and report on suitable targets at great distances over land and sea. That is to say, it is the guiding hand for the Bombers which, being ill-equipped for conducting lengthy search because bomb load must have priority over gas-carrying capacity, and rely on long range reconnaissance units to provide the vital information.

Under the leadership of Captain J.P. (Trooper) Doyle, the 18th Reconnaissance Squadron has tackled with determination the work cut out for it. Provided with five B-10B airplanes in addition to the two OA-4's which have heretofore been associated with long range reconnaissance, the first obstacle, that of seeing that every airplane was equipped with instruments essential for precise navigation, was overcome within the limits imposed by present day restrictions on availability and procurement of equipment.

Realizing the importance of having proficient Dead Reckoning and Celestial Navigators as officer personnel in this Squadron, every effort has been bent in that direction. Four of the originally assigned officers to the 18th are graduate navigators and have provided the nucleus about which it is hoped to develop a squadron thoroughly capable of doing its job. Other assigned officers are being developed into practical navigators as expeditiously as possible.

Not the least of the 18th Squadron's responsibilities is the conduct of the 9th Group Navigation School, also under the leadership of Captain Doyle. The present class of eight members will graduate before the New Year and, although none of the students of the school are members of the 18th, due to the fact that the class was started before the 18th was organized on September 1, 1936, it is our goal to have every Squadron officer an accomplished navigator.

About a month after reorganization, the 18th was selected to participate in the Joint Army-Navy Exercises at Langley Field, October 3rd to 17th, 1936. Due to the shorage of trained navigators, the students of the Group School were drafted into service. The success of the 18th's part in those exercises is a matter of record and need not be discussed further here.

Equally successful was the Squadron's participation in similar maneuvers at Maxwell Field early in November. Notable among its accomplishments during this exercise was the night flight from Maxwell Field to Mitchel Field, sans stop; notable not so much because it was accomplished but because it was accomplished when and in the manner in which it was planned.

Unhindered by its comparative youth, the 18th was a harbinger, during these two exercises, of the greater and nobler

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THE 21ST RECONNAISSANCE SQUADRON, GHQ AIR FORCE.

By the Langley Field Correspondent

It is understood that the reconnaissance Squadron will be called upon for the following types of missions:

(a) Long Range day and night reconnaissance;

(b) General Intelligence for GHQ Air Force;

(c) Location of Targets for Bombardment Aviation;

(d) Aerial Photography.

To carry out the above missions, it is necessary to have a plane of considerably more range than the Bombardment served in order to permit the patrol search and surveillance at the extreme radius of action of the Bombers; it should be large enough to permit relief for various members of the combat crew; it should be comfortable to prevent excess fatigue on extended missions.

Due to the close association between Bombardment and Reconnaissance Aviation, the 21st Reconnaissance Squadron is an integral part of the 2nd Bombardment Group.

The 21st Reconnaissance Squadron, GHQ Air Force, was organized at Langley Field, Va., on Sept. 1, 1936, per letter of the War Department, dated August 12, 1936.

On the date of organization, the Squadron consisted of two officers and 19 enlisted men, with Major H.H. Holland, Air Corps, in command. One additional officer was attached as Assistant Instructor at the Avigation School and four officers were attached as students for the avigation course. Since the organization, the Squadron has been assigned three additional officers and has received twelve enlisted men. Two enlisted men were lost by discharge, due to expiration of term of service. The initial increment of men was assigned from the 59th Service Squadron, which was disbanded. The increases have resulted from transfers and the enlistment of three men. The Second Photo Section is attached to this organization.

Due to a shortage of personnel and equipment, the chief functions to date have been the Avigation School and Aerial Photographic missions.

Three B-10's were attached for photographic missions during the recent Army-Navy Joint Exercises. Two B-10's have been assigned the Squadron and one more is expected within a short time. The Squadron is scheduled to receive five Douglas B-10's next summer.

A Squadron Insignia, which embodies the characteristics of Reconnaissance Aviation, has been submitted for approval.

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BOLLING FIELD COMMUNICATIONS

Although radio communication between airplanes and ground is becoming more and more commonplace, there is always room for improvement in the construction and installation of sets, both in airplanes and in ground control stations. At Bolling Field the maintenance crew of the Communications Department is daily striving to improve the ground control station, and their success can be seen in the increasing efficiency of their department and in the compact arrangement of their equipment. The remote control and operating room is located in the same building as the operations office, and the transmitters are in another building about a half a mile away. Through the ingenuity of of the maintenance crew, the transmitters, the operations office, and the control room are all connected by a master control board in the remote control room. The four transmitters, types 14-A, 132, 187 and 136, in the transmitter building are started or stopped by push buttons on the control board, and the set or sets operating are shown by red indicator lights on the panel. The desired frequency is dialed by a device similar to that on a dial telephone. Should the indicator light fail to signal within ten seconds after the starting button is pushed, all the power can be shut off by a main switch to prevent fire starting in the transmitter building, until the trouble is located. The board also has plugs and connections similar to a switchboard, by which the sets can be operated from the control tower outside, or by the operations officer himself through the switch box at his desk. The panel has a volume control device by which the output to the transmitters can be increased or decreased. The board is built into the wall, with only the indicators, switches and plugs showing on a black bakelite panel. Two auxiliary boards on other walls are connected to the master board and facilitate the working of three or more operators. The control room has seven receiving sets, a station altimeter, a telephone, a direct call system between operations and the transmitter building, and a large clock whose

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Biographies

COLONEL FRED H. COLEMAN, AIR CORPS X

Colonel Fred H. Coleman, Air Corps, now on duty as Commanding Officer of the Panama Air Depot, Canal Zone, was born in Arkansas December 23, 1881. He attended Ouachita College, Arcadelphia, Ark., for two years. During the Spanish-American War, he served as a Private in Company M, 1st Regiment, Arkansas Volunteer Infantry, from May 20, 1898, to October 25, 1898. Receiving appointment as Cadet at the United States Military Academy in June, 1903, he graduated therefrom four years later, and was commissioned a 2nd Lieutenant of Cavalry, June 14, 1907. He was detailed in the Ordnance Department July 1, 1909, for a period of four years, during which time he held the rank of 1st Lieutenant. He was promoted to 1st Lieutenant, October 28, 1913, was again detailed in the Ordnance Department, June 20, 1915, and resigned from the military service on August 30, 1915.

In civil life, Colonel Coleman was connected with industrial concerns until February 20, 1920, when he was appointed Factory Superintendent at the Air Service Engineering Division, McCook Field, Dayton, Ohio, where he had 172 employees under his supervision and was in direct charge of all experimental manufacture of airplanes, engines, aircraft equipment and accessories built at that station. He resigned from this Civil Service position December 21, 1920, to accept appointment as Major, Air Service, U.S. Army.

Ordered to the Primary Flying School, Carlstrom Field, Arcadia, Fla., for flying training, he reported at that station March 31, 1921, and, upon completing the course of instruction, reported at Ellington Field, Houston, Texas, for advanced flying training in August, 1921. While at Ellington Field, Colonel Coleman was in charge of a unit school for officers and instructor in military law. Upon the completion of his advanced training, he was rated an Airplane Pilot (Pursuit) December 7, 1921, and assigned to duty with the 1st Pursuit Group.

Transferred to McCook Field, Dayton, Ohio, January 19, 1922, he was on duty as Assistant to the Commanding Officer at that field and Secretary of the Equipment Board until February, 1923, when he was transferred to Langley Field, Va., for duty as Air Service Supply Officer.

In September, 1924, Colonel Coleman was transferred to Scott Field, Belleville, Ill., for duty as student at the Balloon and Airship School, and upon completion of the course of instruction was rated Airship Pilot and Balloon Observer.

Returning to Langley Field in September, 1925, for duty as student at the Air Service Tactical School, he graduated therefrom in June, 1926; continued for another year of duty as a student at the Command and General Staff, Fort Leavenworth, Kansas, and in June, 1927, upon his graduation, was assigned to duty at Aberdeen Proving Ground, Md., where he commanded the 49th Bombardment Squadron to January 17, 1928, and was Air Officer at that station until July 10, 1930.

While assigned to duty at Aberdeen, Colonel Coleman was on detached service at Edgewood Arsenal, Md., February 10 to April 20, 1929, pursuing a course of instruction at the Chemical Warfare School. From March 24 to May 4, 1930, he was on temporary duty at Mather Field, Calif., as Commanding Officer of the Provisional Air Corps Transport Squadron during the course of the Air Force Command and Staff Exercises.

Colonel Coleman once more returned to Dayton, Ohio, in July, 1930. Assigned to duty as Chief of the Field Service Section, Wright Field, in addition thereto he served temporarily as commanding officer of the field and as acting chief of the Administration Section. From July 21, 1932, to March 13, 1933, he was Chief of the Equipment Branch of the Materiel Division. He was then transferred to Patterson Field, Ohio, and assumed command of the Fairfield Air Depot. He remained on this duty until his recent assignment to duty in the Panama Canal Department.

One of a small number of Air Corps officers holding four flying ratings, Colonel Coleman has passed the 3,000-hour mark in total flying time.

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LIEUT. COLONEL EUGENE A. LOHMAN, A.C.

Lieut. Colonel Lohman dates his active association with aviation as a flyer from August 24, 1920, when he reported for duty as a student at the Air Service Pilot School at March Field, Riverside, Calif. At that time he was on duty as Professor of Military Science and Tactics at the New Mexico Military Institute, Roswell, New Mexico, from which school he had graduated in 1905. From March 28, 1906, to December 11, 1911, he was connected with the New Mexico National Guard, serving as a second lieutenant of Infantry to June 13, 1910, and as Captain and Adjutant to December 11, 1911.

Col. Lohman accepted appointment as a second lieutenant of Cavalry, December 30, 1911. He was promoted to 1st Lieutenant, July 1, 1916; to Captain, May 15, 1917; to Major, July 1, 1920, and to Lieutenant-Colonel, August 1, 1935.

Reporting at March Field, October 30, 1920, Colonel Lohman completed his training in April of the following year, and he was then ordered to Post Field, Fort Sill, Okla., for advanced flying training at the Air Service Observation School. Following the completion of his advanced training in December, 1921, he remained at Post Field until June 30, 1922, as Officer in Charge of Training at the Air Service Observation School. He performed the additional function of Assistant Commandant of this School from April 4, 1922.

With the transfer of the Observation School to Kelly Field, Col. Lohman changed his station to that field, and he was Director of Training of the Advanced Flying School, in addition to performing various other duties, until October 11, 1923, when he was transferred to Phillips Field, Aberdeen Proving Ground, Md., where he served as commanding officer of Air Service activities until June 18, 1926. He was then assigned to the command of the 49th Bombardment Squadron which at that time was transferred from Phillips Field to Langley Field, Va. In September, 1926, he was detailed as a student at the Air Corps Tactical School at Langley Field and, following his graduation from this school in June, 1927, and from the Command and General Staff School, Fort Leavenworth, Kansas, in June of the following year, he was assigned to the command of the 12th Observation Squadron and the Second Division Aviation at Dodd Field, Fort Sam Houston, Texas.

In July, 1931, Col. Lohman was transferred to the Panama Canal Zone, and he served at France Field as Post Operations Officer and Information Officer, and later as Executive Officer at this field until April 25, 1932, assuming command of the 44th Observation Squadron and Albrook Field, Canal Zone, until December, 1932, and of the 16th Pursuit Group at that station until May, 1933, when he was transferred to March Field, Riverside, Calif. For the next three years, Col. Lohman was stationed at March Field and served in the capacity of Post Executive Officer and later as Station Complement Commander. In October, 1936, he was transferred to Kelly Field for duty as Assistant Commandant of the Advanced Flying School.

Col. Lohman is a native of New Mexico, and was born at Las Cruces on March 26, 1886.

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THEY LOVE THE NEW AIRPLANES

The Scribe for the 37th Attack Squadron, Langley Field, Va., states that Lieuts. Day, Eubanks and Pender left recently in the "Big Duck" for March Field to bring back some A-17's and that the entire organization is holding their breath and everything else, hoping that they will be assigned to the 37th.

BLUE AND GOLD CLUB AT SCOTT FIELD

The enlisted men of Scott Field, Belleville, Ill., have organized a chapter of the Blue and Gold Club, patterning it after the principles of the Luke Field Club, the first of its kind. First Lieut. James C. Bean (Chaplain) is the Advisory Officer. It was through his efforts that the Club was conceived and organized at this post.

At present, the membership is 45, and meetings are held every Monday evening. Special group meetings are held during the week. The organization's special hobby groups are Rifle and Pistol Club, Radio Club, Photo Club, Music Club, and Chanute Exam Prep Group. The latter group is studying the mathematics and mechanical principles necessary to the prospective students. Other groups will spring up when a sufficient number of the members become interested in special subjects.

Members of the Club are from the Base Headquarters and 7th Air Base Squadron, 9th Airship Squadron, 15th Observation Squadron, 21st Photo Section, and the various detachments. A special meeting room was obtained and then painted and decorated. Furniture, a ping-pong table and lamps were moved in, and a dozen popular magazines were subscribed to in order to complete the setting. This room is open nightly as a recreation, reading and meeting room.

Colonel Frank M. Kennedy, Commanding Officer of Scott Field, has given the Mechanical Club permission to draw available tools and equipment.

Although the membership of the Club continues to grow slowly, the Club has been well supported by the post personnel at two dances given recently. Considering the fact that the Club was organized in October, only two months ago, it may be said that it is growing by leaps and bounds.

The huge success of this group should be taken as a hopeful sign for the popularity of similar clubs at other fields. The Scott Field secretary will be happy to correspond with any interested parties.

"It is hoped," says the Scott Field Correspondent, "to make the Blue and Gold Club a service-wide organization."

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The 18th Reconnaissance Squadron

(Continued from Page 8).

things to be expected of long range reconnaissance units. Only downright neglect of equipment and personnel development of this most important adjunct of the General Headquarters Air Force can stem the surge of this fast growing, up-and-at-'em outfit, reorganized, yes; redesignated, yes; but, most important of all, living, breathing and chafing at the bit, ready to "go."

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Welcoming this contribution from Mitchel Field, we hope for more of the same kind.

THE 97TH OBSERVATION SQUADRON (C & A)

The News Letter Correspondent from Mitchel Field, N.Y., states that the insignia of the 97th Observation Squadron, a very beautiful and intricate piece of work, designed by Lieut. Waterman, has been adopted officially. The insignia at a distance gives the impression of a "Death's Head," but a closer inspection reveals a camera, binoculars and earphones. The design symbolizes the basic purpose of Observation Aviation, which is to observe, record and report, with deadly effect.

During the month of November, the 97th participated in many aerial navigation flights and tactical missions, stressing front and rear gunnery and instrument flying. Nine new arrivals brought the enlisted strength to 71. One new officer, Lieut. Ellsworth, reported from the Advanced Flying School.

There was another 97th Aero Squadron (Service) which served in the World War. Organized at Kelly Field, Texas, on August 20, 1917, in accordance with the provisions of Special Orders No. 88, Headquarters, Kelly Field, Texas, this Squadron sailed for France on the S.S. ADRIATIC, October 20, 1917. It had no combat service while abroad, returning to the United States on the S.S. MANCHURIA on January 22, 1919. Upon return to the United States, the unit was demobilized at Garden City, Long Island, New York, on February 3, 1919. For its service in France from November 12, 1917, to November 11, 1918, the 97th Aero Squadron earned a silver band for its guidon, engraved "World War."

In order to perpetuate the history and traditions of the 97th Observation Squadron, which served as a unit of the American Expeditionary Forces in the World War, it was reconstituted and consolidated with the 97th Observation Squadron which was constituted March 1, 1935, with headquarters at Mitchel Field, Long Island, New York.

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Bolling Field Communications

(Continued from Page 9)

face is ingeniously marked to indicate commercial airline schedules. With the equipment conveniently and efficiently arranged, and operating on a 24-hour schedule, the Communications Department is keeping abreast of the times.

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War Department orders announce the temporary promotion of Captain Byron E. Gates, Air Corps, to the rank of Major, effective November 29, 1936.

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JUST ANOTHER CATERPILLAR

Flying over North Carolina in a B-10B Bombardment plane on November 17th, Major Samuel M. Connell, commanding officer of the 99th Bombardment Squadron, Mitchel Field, New York, perceiving that the right engine was afire, directed his mechanic, Private Arthur Zenke, to "bail out."

The News Letter Correspondent states that Major Connell landed shortly thereafter in a blaze of glory at Warrenton, N.C., and that, fortunately, no damage resulted.

Private Zenke, in his official report covering his parachute jump, states that he was in the rear cockpit and that he placed his right foot on the seat and left foot on left cockpit rim, jumping headfirst.

"I remained in headfirst position for about five seconds, eyes closed," he said. "I exerted a strong pull on the ripcord, and the parachute opened immediately and I was snapped into normal position. Immediately after the chute opened, I seemed to be standing still in midair. After about one minute I could notice my descent and I began to sway. I was apprehensive of the parachute buckling. When I approached the ground, I appeared to be headed toward a large barn, but when within about 200 feet from this barn a gust of wind blew me into a field. I landed feet first and rolled over backward four or five times. I was nervous for some time after I landed."

Frequent calls are made upon the Information Division, Office of the Chief of the Air Corps, for an up-to-date roster of the Caterpillar Club.

It is not practicable continually to publish revisions of the membership list of this mythical organization, but it is proposed to publish this roster in the News Letter in installments, so that those interested in this subject may be enabled to keep this roster in loose leaf form. Accordingly, the first two pages of this roster are published elsewhere in this issue of the News Letter, and this practice will be continued in succeeding issues until the roster is up-to-date.

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The following noncommissioned officers were recently appointed Master and Technical Sergeants, Air Corps:

To Master Sergeant: Technical Sergeant Ernest N. King, Bolling Field; First Sergeant Roy C. Dunlap, Chanute Field.

To Technical Sergeant: Staff Sergeant Besola Cobb, Langley Field, Va.

Master Sergeant Andrew May, March Field, Calif., retired November 30, 1936.

GOLD SEEKERS AT FRANCE FIELD

The following, much abbreviated diary, kept by Corporal W.T.Bennett of the 25th Bombardment Squadron at France Field, is an account of a journey performed by himself and Tech.Sgt. Paul B. Jackson of the Panama Air Depot into the land which has meant gold ever since the time of Christopher Columbus.

It is evidence of the difficulties of travel in the tropical jungles even with the assistance of the natives who may well be descendents of the same brown men who guided Balboa across the same hazards. It points plainly to the difficulty of spotting any movement from the air, and although good evidence that life is supportable, and that gold is available, does not minimize the fact that "Alaska must have been easier".

Monday,Aug.17,1936. After a night spent in final preparations we left Colon at 4:30 in the morning on the "Elena Maria". We were delayed by motor trouble which made our trip of about 12 hours duration, when it should have been 3 or 4.

At the village we had chosen as a starting place for our adventure we unloaded our equipment and found our guide, one Julio Ortiz, with whom previous arrangements had been made. We proceeded to his home, a native house of bamboo poles and thatched roof, about the size of a large single garage, although it contained three rooms.

Leaving our luggage at the home of Julio we made an inspection tour of the ancient site of the village, unearthing bits of old Spanish or Indian pottery. We have contracted for privileges on the whole site and if we have time we intend to go back for further exploration. From the owner of the finca there, we bought a small amount of a kind of slag that seemed to have a bit of gold in it. This purchase was made more for the purpose of obtaining good will than for anything else.

About six o'clock we returned to Julio's and enjoyed a delicious supper of rice cooked with coconut oil. After supper we took two Atabrine tablets and went to bed in an adjacent empty house.

Tuesday, Aug. 18. We rose early and went to Julio's house for breakfast. A heavy rain set in and as it kept up all day none of our native porters appeared to carry our luggage. Took 15 grains of quinine and retired early.

Wednesday, Aug. 19. An American breakfast this morning. Redistributed our luggage so the natives would be slowed down enough for us to keep up and started about 7:30 A.M. We were carrying a load of about 50 pounds each in specially constructed packs with wide padded straps, and the five natives carried the rest.

After the first hour I threw my leggins away. After the second hour of climbing river banks and wading streams, we peeled off our shirts. We followed the river, sweating, slipping, sliding, swearing and all the time wondering if we could last.

When we finally stopped for a 30 minute rest the seven of us ate a two-pound can of raisins and a few pieces of bread.

After this lunch we had to travel entirely in the stream, going against the current in water sometimes hip deep. When we reached the headwaters about sundown the hellist contraptions on our backs seemed to weigh nearer 300 lbs. than the 50 they had been. Although stiff and sore we had to establish a camp. We set up the tents while the natives gathered wood, built a fire and cooked some green bananas and rice. We made about 12½ miles today of very hard traveling. Took two Atabrine tablets immediately.

Thursday, August 20. Broke camp before 8:00 AM and began the climb that took us across the Continental Divide. This too was constant spilling and sliding. We found remnants of the old Spanish Trial two or three times.

We started down into the valley of the Boqueron at about 11:00 AM. We had heard a plane earlier evidently trying to contact us, but since leaving camp we had seen only a few glimpses of even the sun. Even the rivers were so overgrown that the sky was obscured. The jungle was thick and steaming, with great vines and enormous trees of all kinds. The trees met overhead along the rivers.

River travel was the easiest even though the water was sometimes over waist deep. There was a small fish, probably related to the Pirana that kept nibbling at any exposed skin. My feet began to trouble me greatly because of so much wading over stones.

When we stopped for the day, we fished, first attracting the attention of the blood-thirsty nibblers by throwing a few stones into the muddy water, and caught a sizeable mess, the largest being about 3½ lbs. With the fish and rice we had a good supper, and we made camp on a sand bar. The rain continued and the river rose but not enough to force us to the mountain.

Friday, August 21. Broke camp about 8:00 AM and went down stream. All the time the river became deeper and the

the boulders larger. Finally we were forced to leave the Boqueron for a smaller stream. About a mile up stream we found much black sand and plenty traces of gold in rocks.

Stiff and sore as we were, we climbed the divide between this and the headwaters of another stream and started down its course. About 2:30 PM we heard a plane, and hurrying down stream to a small clearing we fired a smoke bomb. The smoke did not penetrate the jungle however, just hung in the trees. Further downstream we found some old gold workings, probably Colombian. There was a tree house built in the top of the trees about 25 feet from the ground.

We attempted a camp site further down in a clearing which we hoped would be large enough for aerial deliveries. It was the only clearing we had found. Too tired to prepare beds we slept on the ground again, after taking our fever medicine.

Saturday, Aug. 22. Went early this A.M. to arrange the agreed signal to aircraft in some visible spot. Found a large boulder strewn bar and placed as large a circle as I could. When the plane located this signal the arrow I had placed indicating the direction of camp was mistaken for a figure one, which was to have been the "chow" signal. A message was dropped but air currents landed it away from the bar and it could not be located.

About 1:30 P.M. the plane came back, located our camp site after considerable circling and after a few passes, released a package of food via chute. Although it landed in a tree, we soon had it and everything was intact. The natives went wild with excitement.

During the morning we had found considerable gold and believe hydraulic operations here would net a small fortune.

After a meal of pancakes, fish and quinine, we went to bed.

Sunday, Aug. 23. Fixed bunks today so that we wouldn't have to sleep on the ground. A good thing too, as about midnight we had a hard rain and our tent leaked badly. The river rose about one foot, but it is hard to maintain such a head of water in the mountains, and it soon went down.

Sent three natives back home today and rearranged camp. Shot a Nikki and two turkeys. Julio cooked the young turkey with a pound of rice and it was delicious. These natives can do a lot with any kind of game, rice, oil and an onion. The old man took the Nikki and the other turkey, quartered them and cooked, dried and smoked them all at once over the fire.

Monday, Aug. 24. Today we found a large gravel bed with lots of gold in it. A P-12 flew over and must have seen our "rice" sign. We need rice. Had supper of dried Nikki and pancakes.

Tuesday, Aug. 25. Broke camp today and moved on. It was hard going and we went over nine mountains (hills). Sgt. Jackson is having tooth trouble and is going to arrange to go down to Pequini tomorrow and go back to France Field.

Wednesday, Aug. 26. After Sgt. Jackson got under way we started for another river we wanted to explore. A deer trail helped us some, but this gave out soon. A little climbing over and around some steep cliffs and we had to take to hip deep water. The rapids we encountered were very bad. Found a little creek that is rotten with gold. If we can work this with hydraulic methods we can do well.

Thursday, Aug. 27. Going on today into unexplored country. Found a small park that will bear a lot of exploring. Two small deer stood watching in wonder at about 20 feet. The vegetation is different here too.

Julio has a toothache too. Has had it for about a day without complaining. A weak iodine solution and four aspirins seemed to do his gums and rotten tooth some good. He says he is O.K. now. He is learning a little English and is quite proud.

Friday, Aug. 28. Went panning today. Good results, found nine colors in one pan. The old man got another Nikki and we went to camp for dinner. A hard rain kept us in camp all afternoon. Lightning struck somewhere near us.

Saturday, Aug. 29. After breakfast there was little chow left and no sugar. If we don't get some sugar by plane today, am afraid some of the natives will leave. Panning today resulted in many colors and one small nugget.

The plane arrived about 1:00 P.M. and tried to drop to us. Saw a message leave the plane which Julio retrieved. The supplies must be hanging somewhere in a tree. If they are not found we will have to leave.

No trace of the food. For supper we had cornmeal cakes and one-half of a small Nikki. If the B-10 is the only plane available for these deliveries we'll have to move, as they cannot get down close enough to us.

Sunday, Aug. 30. Julio and the old man looked for the chow again in a pouring rain, but couldn't find it. We ate a little dried Nikki.

We packed and went on to where we hoped to get a boat and get out the same way Sgt. Jackson went. Sgt. Jackson was back at France Field, and about noon today he found us and after several passes in the B-10, dropped a bundle of chow, and some money to be used in hiring a boat. The rice, flour, beans and cigarettes were all in a mess in the bottom of the bundle, but we sieved out the flour and picked out the beans. Can't get a boat for a few days so the chow was mighty welcome. Had the first good meal in days.

Monday, Aug. 31. While waiting for the boat we did some more panning, getting many colors and small nuggets. As far as I followed this stream there was gold, and I didn't reach anywhere near the head of the stream. More Atabrine and again early to bed.

Tuesday, Sept. 1. Contracted for a boat after much persuasion and promised to pay $4.00 for passage down to Madden Dam. Panned 15 pans today and got gold. The prize pan had 19 colors. More quinine and to bed.

Wednesday, Sept. 2. Today we started down the river, leaving these streams that can yield so much gold, headed for Madden Dam and civilization.

There were rapids but we didn't have to get out as the water is much deeper now than in the dry season. It was a beautiful trip but there was so much rain that all I could do was look out from under my hat and occasionally shoot at something.

We made the dam at 2:45 P.M. and caught a bus to Panama, then the train to Colon. I seemed to be the subject of a lot of whispering because of my jungle clothes, growth of whiskers and my pack, and I suppose being nearly barefooted, had something to do with it, but it was the end of the adventure and I was happy.

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AWARD OF THE DISTINGUISHED FLYING CROSS

Announcement was recently made by the War Department of the award of the Distinguished Flying Cross to three Air Corps officers and two Air Corps enlisted men.

First on the list is Brigadier General Henry H. Arnold, Assistant Chief of the Air Corps, to whom the D.F.C. was awarded in recognition of his participation in the Alaskan Flight of 1934. The citation accompanying this award reads as follows:

"Henry H. Arnold, brigadier general, then lieutenant colonel, Air Corps, United States Army. For extraordinary achievement while participating in an aerial flight as pilot and commanding officer of a Bombardment Squadron of ten airplanes, from Washington, D.C., to Fairbanks, Alaska, and return, from July 19, 1934, to August 20, 1934. By his untiring energy, fearless leadership and extraordinary professional skill, Lieutenant Colonel Arnold organized, directed and completed over 18,000 miles of exceptionally dangerous flying, including a non-stop flight from Juneau, Alaska, to Seattle, Washington, a distance of 950 miles over water, under extremely adverse weather conditions, without the loss of personnel and equipment, to successfully demonstrate the mobility of the Air Force and to establish new records for the Army Air Corps in aerial photography and long distance mass formation flying."

The four other recipients of the D.F.C. are Major (Captain) Barney M. Giles, 20th Bombardment Squadron, Air Corps, U.S. Army; Second Lieutenant James H. Patrick, Jr., Air Corps Reserve, U.S. Army, and Staff Sergeant Donald E. Hamilton and Corporal Frank B. Connor, both of the 96th Bombardment Squadron, General Headquarters Air Force, U.S. Army.

These four members of the Air Corps articipated in a mission of mercy which was instrumental in saving the lives of seven men.

The citation accompanying the award of the D.F.C. in this instance is as follows:

"For extraordinary achievement while participating in an aerial flight from Concord, New Hampshire, to East Brewster, Massachusetts, and return, on the night of February 9, 1936. Having been notified that seven Civilian Conservation Corps enrollees were stranded on an ice flow in Cape Cod Bay, Major Giles, accompanied by Lieutenant Patrick, Staff Sergeant Hamilton and Corporal Connor, took off in an airplane during the hours of darkness, under dangerous flying conditions due to weather, and successfully located the men, dropped a message to them and reported their location, thereby being chiefly responsible for saving their lives."

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WARRANT OFFICER KNIGHT GOES TO WRIGHT

Warrant Officer Herbert G. Knight, who recently planned to retire after 30 years of service, has decided to remain in the service and has been assigned to Wright Field, Dayton, Ohio, to take the place of Warrant Officer Michael J. Hurley, who has served so effectively for many years in an administrative capacity with the Materiel Division, and is retiring, effective December 31st.

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Second Lieut. Clyde Charles Harris, Air Reserve, now at Barksdale Field, La., was placed on active duty for a period of three years, effective January 2, 1937.

FOREIGN OPINIONS ON AVIATION, PRESENT AND FUTURE
From the Italian aeronautical journal "ALA D'ITALIA"
A continuation from the previous issue

GIANNI CAPRONI

There can be no doubt that metallic constructions would be more spread for some time if in examination of the much discussed wood-metal problem and in the consequent discussion for all-metal, wood and mixed constructions it had been possible to reason as pure designers and with the only worry of flying performance. But when the defense of the country is being dealt with, no designer can have first place, but the industrial man and with him the problem of series production in conditions of emergency like those imposed on a nation in war.

If we were all supporters of metal constructions * * * our potential production in cases of emergency would be reduced by half. * * * A mixed construction is quicker, more ductile and costs less. It does not last so long, but this cannot be considered as an inconvenience seeing that the average life of the prototype is shorter than the average life of a series machine. When flying will be more grown up and progress not so quick, we will have the inevitable inversion. Then the all-metal advent can only take place by taking advantage of the most progressed industrialization. * * *

A distinction must be made between civil and military aviation when examining the problem of the 500 Km. p.h. (311 m.p.h.) for standard airplanes. This speed can be reached in civil aviation without economical damages in the field of intercontinental links for non-stop flights of at least 2000-3000 kilometers. These flights can take place at a high altitude and they will be possible as soon as we will have been able to put into practice what the experimental flights have taught us. * * * In this field and for from 1000 to 2000 h.p., the liquid cooled engine will find its dominion. On the other hand from 500 h.p. downwards, the monopoly of the air cooled engines will become continually more marked, and it will be an open question between 500 and 1000 h.p.

All the conditions change for military aviation. The problem is no longer of material, but of men. The pilots in permanent service will certainly know how to train themselves for the requirements of the 500 Km. p.h. planes. But the professional pilots in a war are the least. The others of the reserves and the new pilots will have neither the time nor the chance to make their ability adequate to the extra fast craft. And they will be the majority. In this field it is to be seen up to what point the mass of men numerically prevalent can go up to the level of the equipment and to what extent the mass of the equipment will have to go down to the level of the men.

War is a general problem not only of quality. It is not easy to find the right point of equilibrium, namely, that point that ensures the most elevated product between the two factors.

We have no other help but experience. Taking into consideration that the future actions of bombardment will nearly always take place in the night and not forgetting past experience, I must come to the conclusion that the present average speeds of military aircraft will perhaps have to be lessened rather than increased.

GENERAL GEORGES REPPAS
Chief Commander of the Greek Air Force

I do not believe, at least for the very near future, that aerial combat tactics will be radically changed. In any coming war, like in 1918, military aviation will play a leading role, and aeronautical supremacy will mean a serious chance to win the game, but in order to realize a full victory, enemy territory has to be occupied by land army, and this task cannot be accomplished by aviation alone. It is a mere illusion to think that both land and navy forces could be entirely substituted by aviation. It is fine to own a powerful air force but it is better to be strong in the air and on the sea too.

As far as tactics is concerned, it is my opinion that the fighter being faster and of a easier manoevre than the bomber and having improved its armament (more machine guns and even a small gun) it is consequently superior to the bomber which, before carrying out its mission, will have many obstacles to fight. So we can conclude that speed and range increase have not essentially changed aerial war tactics.

I believe that autogyros will have a few limited applications only, for instance: connection service. In the quite improbable case of an increase of its useful load it will perhaps be used for some other purposes. I do not believe in some military applications of the airship either, owing to its low speed and its huge bulk. I am convinced that the lot of aerial infantry landed by parachute is to be fully destroyed even before any serious enterprize can be carried out, its armament and ammunitions are too limited. At any rate, I think that it will be very efficient against a demoralized and routed army.

WALTER MITTELHOLZER
Director Manager of "Swissair."

In my opinion commercial flying at 500 Kms. p.h. will only be possible at a flying altitude from five to ten thousand metres. Meantime aerodynamic design of airframes must be improved and more efficient engines with centrifugal supercharger have to be realized. Anyhow speeds of about 500 kms. p.h. will not be of any economical value except in the case of very long trips.

I firmly believe that within fifteen years international air navigation will set at a flying height comparable to that of the actual world record. As for seaplanes I think they can stand against the increasing invasion of landplanes menacing their field of utilization, but it is also my opinion that very reliable twin-engined landplanes will always overcome seaplanes owing to the fact that landplanes take off and landing can be easily performed no matter how is the weather, whilst seaplanes will be always handicapped in rough sea. * * *

ASGER GRANDJEAN

Chief of Danish Royal Navy Air Service

It seems as if the development will further emphasize the difficulty in finding such types of aircraft as are suitable both for big countries and for countries with only limited defense problems. * * If the speed due to aerodynamical improvements in the coming years will increase still more, I believe that the aerial combat of the fighters will be discontinued, partly because the human constitution can't stand further strain and partly because the maneuverability of the aircraft is reduced with increasing speed.

The present armament consisting of 6-8 mm. machine guns is of too little effedt and is most likely going to be replaced by machine guns of 20-30 mm. calibre. In countries with special interest in small targets (f. ex. ships) and in countries where the clouds most of the time are low, the dive bombing may be of increasing importance. At present there exists no efficient bomb sight for this bombing, but it is likely to be developed on the gyro principle.

At present the military aircraft seems better suited for fighting ground targets than targets in the air, and it may well be possible that many of the new types which the greater countries at present are acquiring in large quantities will be useless if called upon to fight against an air force of similar strength and standard. Peace-time maneuvers have not yet been able to verify that the theoretical foundation on which the aerial armament of the world has developed is the right one.

The speed is high but it is likely to be higher yet, but the armament is still the old one and rather out of date. The systematic attempts which the Russians started in landing infantry from aircrafts by means of parachutes are interesting and may possibly be of certain value as a supplement to the landing of troops from ships. For certain countries it may in the future be of advantage if they could lay out mines from aircraft. Regardless of the tactics employed in bombing attacks, I wish to say that this must be varied in each case in order to maintain the advantage of surprise.

CESARE PALLAVICINO

Chief Engineer at the Caproni Cab Works (Italy)

In my opinion there must be two distinct types of fighters:

1st type.- Small single-seater, very light, with short range and relatively small wing loading in order to allow high rates of climbing for towns and factories defense. To the high speed of the aggressor bomber planes it will oppose its easiness in diving attacks. The armament will consist both of large and small size machine guns. Such fighter will fully answer the English interceptor specification and its performance will entirely satisfy any exigency concerned.

2nd.- Multi-seater (more likely two than three-seater) twin-engined, very fast plane with great range and powerdul armament, to be used to attack flying enemy formations.

It is to be foreseen that in future these two types will differ more and more until the mixing of their different performances into a single type will be impossible. The actual weight of the second mentioned type is about two tons. In future, as a result of high range, high speed and more efficient armament, it will reach four and even five tons, with a consequent decrease of efficiency in diving attack which experience proves to be the best. Therefore it will be necessary to try some different methods of approach. Suggestions for such researches may be given by further advancements of armament.

For a military airplane the question of armament is a ground of research as much fertile as those of aerodynamic design and of mechanical efficiency. Automatic guns which may be directed and fired from a distance by a single operator acting a sort of key-board would be of outstanding importance. When experiments on that subject will reach positive results, then we will see a big transformation in the whole shape of that type of airplane.

The high speed actually developed by only very few prototypes will later become the normal speed of standard airplanes as well. First of all, I think we have to raise the flying altitude of aerial navigation. At 3500 meters with the same power, the speed is increased about 13 percent over the speed at sea level, only on account of air density. At 4500 meters the increase is 20 percent. That is a benefit which can be simply gotten by using a more efficient supercharger. * * *

As to aerodynamic design itself, no big improvements can be expected, at least for the moment. However, it will be interesting to know something more about aerodynamic's induction among the various parts of the airplane, which in some case has given propulsive effects. It is not improbable that when they will be fully known they may give suitable speed increase.

LOUIS P. WEILLER

General Manager, Gnome and Rhone Engines Ltd. Co.

To fly close to the ground at 700 kms. p.h. with no useful load at the cost of very high power is a wonderful performance both for constructors and pilots. To fly 10,000 kms. non-stop, to raise a plane 15,000 meters above the ground and carrying, without strain and glory, war material, goods or passengers 10,000 kms. far off, that is real future, and in my full knowledge of today's and tomorrow's aviation possibilities, the thought that this future will come true is comforting.

A 500 kms. p.h. commercial speed seems to be possible thanks to higher power per weight, to the ever increasing efficiency of engine, to advancement in aerodynamic design and to the efficient devices which allow suitable landing. In 1925 the power of air-cooled engine was hardly more than 500 h.p. Nowadays 1500 h.p. engines are a well accomplished feat. In 1925, the diameter of a 500 h.p. air-cooled radial engine was 57 inches. Actually a double-row radial air-cooled engine is only 56 in. and we can get 700 h.p. from the same engine measuring only 37 in. Step by step without particular innovations the average speed of 500 kms. p.h. will be attained. Progress in the following details will play an outstanding role:

Improvement of the octane value of fuel in order to make possible the use of higher compression ratio and higher fuel admission pressure in order to increase the engine power with no risk even at low altitude.

Speeding up of engine's cooling in order to eject, without difficulty, the heat due to superpower.

More extensive use of variable pitch propellers which allow to get from the engine the best efficiency in any case.

Refinements of cowling's shape in order to reduce the drag during high speed flying and fitting of fineness-breaking devices which give additional cooling for take off and climbing.

Suppression of spray by making smooth and continuous the shape of the plane, along with increased efficiency of superlifting devices at landing speed.

Improvements of engine and flying control instruments and blind-flying apparatus.

Further reduction of weight.

When cruising speed of civil and military aircrafts will be set at 500 kms. p.h., the question of airports equipment will be strongly of actuality and cement runways will not be any more a sheer luxury or a curiosity. High powered air-cooled engines will show more clearly their superiority for high speed, as the question of engine cooling consists particularly in leading fresh air towards its heated parts. This becomes easier when speed and air pressure in the cowling entrance are high, the deflectors being then in full efficiency.

As far as aerial navigation at 15,000 meters of altitude is concerned, I think that this is not only possible but necessary when one thinks of cruising speed from 700 to 1000 kms. p.h. for long non-stop flights. Aerodynamic design for aircrafts is approaching perfection and quite soon its improvement will be but insignificant. For any further increase of speed it will be necessary to fly in more favorable conditions of air resistance as only very high altitude can offer. The outstanding problem will be of supplying with air the engine, the pilot and the passengers at normal pressure and temperature. This is not quite impossible but has still to be worked out. According to my opinion high altitude flying is not necessary when the aim is to link Paris to New York in ten hours, but it will be so when our aim will be of improving such achievement, which five years hence will appear amazing but ten years later will make us smile.

ANGELO AMBROSINI

President of the "Societa Aeronautica Italiana."

From a general point of view I must say that at the present time aviation has only begun to leap forward. Notwithstanding all the talking that is going on about marvelous improvements, we have done nothing more than a beginning, a mere scratching on the surface of things. Our energies have not always been properly used and have not been put to contribution only towards a constant improvement and progress. A proof of this is in the many opportunities and possibilities that still stand before us. That is why I think that to standardize our flying machines on a 500 per hour basis is not difficult and not an aim far to be reached. It will be sufficient to consider more seriously and with greater confidence the interesting problem of super-lifting devices and, awaiting new solutions, improve the present super-lifting devices so that they should not alter the ideal profile for maximum speed and maintain unchanged the present lift coefficient. The rest: constant altitude power and adaptation of the grounds is simply a question of 'will'. If those who are responsible for it and have the required capacity and experience will tackle the problem with good will and enthusiasm, we shall see very soon new wonders.

A judgement on the two kinds of engines can be given only through experience. In the first place: Why 'water cooling' and not 'liquid' cooling? If, in 1936, we still speak of water it is... air that shall have the best of us. It is a matter of course that as regards simplicity, safety, weight and little vulnerability, air has more than one advantage over the liquid system but, according to me, only for a given power and reduced diameter. To smooth out and refine wings and body to spoil them afterwards with 'pans' of a metre and a half diameter has no common sense.

All well and good the improvement brought about by Magni and the N.A.C.A. with their rings, and that which Krupp (as it is said) promises to realize with an even more brilliant solution, but there still remains 50% of frontal resistance offered by the engines and which they must support.

I would incline for a half-way solution. Air up to 300/400 h.p. - exclusively radial models- no cylinders in row (that is some well cooled against some not cooled at all)- the engine as much as possible of the 'square type' so as to reduce its diameter (the speed range has no importance as there are reduction gears) - seven cylinders up to 200 h.p.; 14, on two rows, for greater powers and up to said limit. As regards 'liquid' cooling it is time to wake up. To say nothing of the 'evaporating' system which is very interesting but, as it seems, presents now a few drawbacks, as regards fitting, for its use in aviation, we have 'glycoletilene.' This last is particularly well suited for aviation, where it will triumph and not only for the economy in weight, for its insensibility to low temperature, and for its property of reaching boiling point towards 200 centigrades, which allows the engine to tolerate very high temperatures thus realizing an economy of fuel and an increase in power.

Engines cooled by glycoletilene - circulating in canalizations made out in the casting, compressed pump - no piping and joints outside so as to get as near as possible to the low vulnerability of the 'air' type. Opposite cylinders (eight-twelve-sixteen) so as to have a perfect balance of the efforts - of the masses - high specific horse power - reduced encumbrance, so as to allow the fitting of the whole engine in the wing (thick monoplane wing) between ribs elongated propeller axe so as to allow the setting of the propeller on the wing trailing edge.

By this formula we shall obtain: perfect aerodynamic streamlining of the plane - concentration of the masses closer to the baricenter- no tempering with the leading edge of the wing which shall, at last, act as it had been conceived - increased efficiency of the propeller- easy inspection and revision (over and under) of the engine - economy of cowling as they will serve as ventral and dorsal covering of the wings.

I do not want to close without mentioning another point which, as an Italian and aircraft manufacturer, is very dear to me: the problem of metal-wood. On this matter I am unrelentingly decided: Wood! at least for many years more. Nothing is more absurd - and may even, in a certain way, become hurtful - than to continue to pretend that everybody is in just the same conditions and can act as others do. * * We shall one day find how it is possible to reduce weight even by using wood. My company has built wooden monocoque - with 100% national wood, not imported stuff as is said by those who are against the use of wood - which can very well sustain comparison. We are projecting a plane with special features which are considered 'daring', made entirely of wood, and we feel sure of its satisfactory behaviour. The best records of the Italian aircraft have been scored by wood. I do not want with this to pass as a wood maniac, but only point out that, at the stage we have reached in the evolution of aeronautics, wood can still, and well, hold its place. * * *

Lastly: make room to the young. Understand them, draw them closer to us. Kindle their enthusiasm, their faith that are their living poesy. Let us not be afraid of the future,- not overfond of the past. Man crosses from old to new things over a bridge made by the unrelenting springing up of young, fresh, enthusiastic energies.

GEORGE MADELUNG, of the Stuttgart's Polytechnic

I do not believe that wood or mixed constructions will succeed in eliminating completely metal constructions. In Central Europe's temperate climate, wood as well as mixed constructions are perfectly suited. Their prototypes are often less expensive than the corresponding all metal machines, and this holds true both for serial production as well as for reparations made by small factories.

The use of stainless steel will increase. But its weight makes it not so well suited for strong stressed-skin constructions. There is the superiority of light metals, among which, in the first place, we find duralumin. Whether this last one and its alloys will be some day replaced by magnesium and its alloys it is not now easy to foresee. It will depend on a further increase in chemical and mechanical resistance of magnesium.

For the future I do not foresee a big success for biplanes as high speed airplanes. Even today they are not so appreciated compared to monoplanes against which they have the following disadvantages: small wing depth and no thickness, bigger number of constructions pieces, unpractical fuselage attachment.

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EXTENDED ACTIVE DUTY FOR AIR RESERVE OFFICERS

Under Special Orders of the War Department, recently issued, the active duty tours of 26 second lieutenants of the Air Reserve, now stationed at Barksdale Field, Shreveport, La., were extended for various periods up to nearly three years. They will continue to be stationed at Barksdale Field, viz:

To June 15, 1939

Willis Griffith Carter
David Gerard Desmond
William Eades
Clarence T. Edwinson
Harney Estes, Jr.
Willard Jones Foley,Jr.
John F. Guilmartin
J. W. Hinton
John Riley Kane
Arthur E. Livingston
Richmond A.Livingstone
James Crawford McGehee
Alexander F. Sangster
Frank Beard Scott
Robert F. Strickland

To June 30, 1939

Moultrie P. Freeman
Jay Lanham Gentry
John William Graham
Charles Duncan Jones

To July 1, 1939

Boatner R. Carney
Robert F. Worden
Lee Williams

To October 14,1939

Henry Ovide Bordelon
Edgar Ross Camp
Craven Clark Rogers
John Allen Way

The active duty tours of second lieutenants, Air Reserve, now serving at various other Air Corps stations, were extended, as follows:

To June 15, 1939

Martin Ansel Bateman	Hawaiian Department
William Hogan Clark	" "
Henry Russell Spicer	" "
Ormond John Mosman	Fort Lewis, Wash.
David Reynold Nelson	" " "
Robert Ashman	March Field, Calif.
Donald Wm. Eisenhart	" " "
William A. Hatcher, Jr.	" " "
Podge McCauley Reed	" " "
Frederick Wm. West,Jr.	" " "
William Walter Pannis	Hamilton Field, Calif.
Lloyd A. Walker, Jr.	" " "
Wilburn Roger Hunt	Selfridge Field, Mich.

To June 30, 1939

John Wendel Mession	Mitchel Field, N.Y.
James Linn Travis	March Field, Calif.

To July 1, 1939

Theodore M. Melden	Mitchel Field, N.Y.

To October 14, 1939

Wilbur Maurice Denham	Mitchel Field, N.Y.
Murray B. Dilley, Jr.	" " "
Vernet Vucasin Poupitch	" " "
John Gebelin, Jr.	Selfridge Field, Mich.
Maurice Edward Glaser	Hamilton Field, Calif.
Roger Merriam Reynolds	Hawaiian Department
James Thomas Connally	March Field, Calif.

The active duty tour of 2nd Lieut. Elmer Earle McKesson, transferred from Selfridge Field to Brooks Field, was extended to June 30, 1939.

Second Lieuts. Edwin Davis Avary, Jean Rogers Byerly, Calvin Ely Peeler and William Stephen Pocock, Jr., under orders to sail about December 19th for Panama (from duty at Hamilton Field, Calif.) will continue on active duty until November 15, 1939. Second Lieut. James Austin Philpott is continued on active duty at Hamilton Field until June 30, 1939.

MODEL PLANE FLIES FOUR MILES

An airplane at Kelly Field is nothing unusual, but one that is only 48 inches long, with a wing spread of 64 inches and weighing only $3\frac{1}{2}$ pounds, powered with a gasoline engine which drives it on flights up to four miles, at an altitude of about 1500 feet, is something that even veteran flyers and mechanics at the field will stop and gaze after with interest. Such a plane has been taking off from the field on test flights on Sundays and in the late afternoons when regular training flights are at the minimum. The plane was constructed by Private William Hewgley, of the 12th Air Base Squadron. Hewgly, a native of Paris, Texas, has been experimenting on model airplane building since he enlisted at Kelly Field two years and eight months ago.

His first attempts were with rubber-band driven models, which require a many-stranded rubber band attached to the propeller. This experience gave the knowledge he needed to build a power-driven model. With the aid of William Osborne, 142 Harriman Place, a friend, a small Tom Thumb, one-cylinder gasoline engine was purchased, and Hewgley, Osborn and another soldier, Clem M. Morgan, set out on the model construction. Working on week-ends and off-duty hours, Hewgley built the plane of balsa, spruce and white pine woods, and pieces of spring wire and small bits of aluminum. The wings and fuselage are covered with bamboo paper which, when it is treated, shrinks in two directions after it dries, thus making a perfectly tense wing and fuselage covering. Hewgley estimated that about thirty days were required in building the plane.

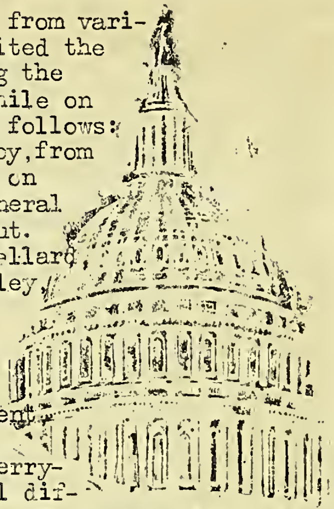
When the plane is to be flown, the wings are attached to the other part of the plane with a strong rubber band, which is wrapped around the center part of the wings and under the fore part of the fuselage. This, an invention of Hewgley's, allows for less shock when there is a crack-up, for occasionally they do occur.

During a recent flight, the plane was caught by a wind current that carried it away from the field. It was found four miles away in a tree near the Castroville Road. Because of the rubber band, the wings were only slightly damaged and were easily repaired. It was estimated that the plane was in the air about 30 minutes and had traveled at a rate of about eight miles an hour. The engine which drives the plane is smaller than a man's hand. Its one cylinder has only a 13/16th bore and a 7/8-inch stroke. Its weight, including three dry cell batteries, coil and condenser, is 18 ounces. It is mounted on 1/16th-inch aluminum. Its fuel is composed of three parts gasoline to one part oil. The fuel tank holds only $1\frac{1}{2}$ ounces of fuel.

Usually the plane flies in large circles and can be observed from the ground. This is due to the propeller torque which causes the plane to circle in the opposite direction in which the propeller turns. By luck, Hewgley's model seems to "bank" naturally in the air as if a pilot were in the plane and was making a turn. And when the plane lands it "levels off" at just the right angle instead of "nosing over" or "ground looping," as is the case sometimes in planes not under control.

(Continued on Page 23)

NOTES FROM THE WASHINGTON OFFICE



Air Corps officers from various stations who visited the Chief's Office during the course of flights, while on leave, etc., were as follows: Major Vincent J. Meloy, from Langley Field, while on leave.- Brigadier General George H. Brett, Lieut. Colonel Richard H. Ballard, Major George H. Beverley, Captain Robert S. Israel, Jr., and 1st Lieut. William H. Tunner, from the Panama Canal Department, who arrived by boat for the purpose of ferrying to Panama several different types of planes for use on the Isthmus.- Captain Milton J. Smith, from Shoen Field, Fort Benjamin Harrison, Ind., for temporary duty in connection with Reserve matters,- 1st Lieut. L. S. Kuter, on navigation flight from Maxwell Field.

Lieut. Colonel Rosenham Beam left December 8th for the West Coast to ferry to the Boston Airport a North American BT-9.

Major Norman D. Brophy, up to recently on duty with the Colorado National Guard Air Service, Denver, reported for duty in the Plans Section. He lives at the Wardman Park Hotel.

Majors Leland S. Miller and Karl S. Axtater returned from leaves of absence.

Captain Robert V. Laughlin, until recently on duty in the Patents Section, was assigned to other duties in the Judge Advocate General's Department. His duties in the Chief's Office were taken over by Captain John J. Honan, J.A.G. Dept.

Captain Randolph Williams returned to Langley Field.

Major Hubert V. Hopkins, from Wright Field, reported for temporary duty for a series of conferences with the Aeronautical Board.

Captain M.E. Gross left for the West Coast to ferry a plane from Inglewood, Calif.

Lieut. Colonel L. B. Jacobs departed on several days' leave.

Major Earl Wenworth Moss, Air Reserve, of Fort Wayne, Ind., who is connected with the Heilbroner Baseball Information Bureau, reported for two weeks' active duty in the Information Division.

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Second Lieut. William Robert Graham, Air Reserve, of Fruitland, Idaho, was ordered to extended active duty at Brooks Field, Texas, for three years from December 15, 1936.

The Caterpillar Club

THE ROSTER

No.	Date		Name	Rank	Place of Jump
	1919				
1	July	21	Henry Wacker	Civilian	Chicago, Ill.
2	July	21	John Boettner	Civilian	Chicago, Ill.
	1920				
3	August	24	William O'Connor	Civilian	Dayton, Ohio
	1922				
4	October	20	Harold R. Harris	1st Lieut. Air Corps	McCook Field, Ohio
5	November	11	Frank B. Tyndall	1st Lieut. Air Corps	Seattle, Washington
	1924				
6	April	23	Wilfred Bottomfield	Civilian	San Antonio, Texas
7	May	13	Eugene H. Barksdale	1st Lieut. Air Corps	Fairfield, Ohio
8	June	5	Will W. White	2nd Lieut. Air Corps	Kelly Field, Texas
9	June	13	Walter Lees	Lieut. Air Corps Reserve	Dayton, Ohio
10	June	18	John A. Macready	1st Lieut. Air Corps	Dayton, Ohio
11	July	11	A. R. Crawford	2nd Lieut. Air Corps	Kelly Field, Texas
12	August	29	W. E. Goggin	Private, Air Corps	Bolling Field, D.C.
13	August	29	L. L. Koontz	1st Lieut. Air Corps	Bolling Field, D.C.
14	October	16	W. M. Coles	Gunner, U.S. Navy	Coronado, Calif.
15	November	4	William E. Lynd	Captain, Air Corps	Kelly Field, Texas
	1925				
16	March	5	Charles D. McAllister	2nd Lieut. Air Corps	Kelly Field, Texas
17	March	5	Charles A. Lindbergh	Flying Cadet, Air Corps	Kelly Field, Texas
18	March	20	Frank O'D. Hunter	1st Lieut. Air Corps	Dayton, Ohio
19	April	6	C. V. Mix	Sergeant, Marine Corps	Quantico, Va.
20	April	10	J. Thad Johnson	1st Lieut. Air Corps	Eaglesmere, Pa.
21	May	22	C. H. Schildhauer	Lieut. U.S. Navy	Lakehurst, N.J.
17	June	2	Charles A. Lindbergh*	2nd Lieut. Air Reserve	St. Louis, Mo.
22	June	28	Mrs. Irene McFarland	Civilian	Cincinnati, Ohio
23	August	17	Kirtley J. Gregg	2nd Lieut. Air Corps	Lavernia, Texas
24	October	1	Ford O. Rogers	Captain, Marine Corps	Langley Field, Va.
25	October	10	Fred C. Nelson	1st Lieut. Air Corps	St. Louis, Mo.
26	November	11	Leonard S. Flo	2nd Lieut. Air Reserve	Wright Field, Ohio
27	November	11	John McGlynn	Private, Air Corps	Wright Field, Ohio
	1926				
18	March	5	Frank O'D. Hunter*	1st Lieut. Air Corps	Selfridge Field, Mich.
7	March	24	Eugene H. Barksdale*	1st Lieut. Air Corps	McCook Field, Ohio
28	May	10	Horace M. Hickam	Major, Air Corps	Langley Field, Va.
29	May	10	Harold Geiger	Major, Air Corps	Langley Field, Va.
30	June	2	S. E. Ingersoll	Lieut. (JG) U.S. Navy	Pensacola, Fla.
31	June	17	J. T. Hutchison	1st Lieut. Air Corps	McCook Field, Ohio
32	June	17	Paul Stanley	Civilian Observer	McCook Field, Ohio.
33	July	5	Walter M. Williams	Capt. Tenn. National Guard	Nashville, Tenn.
34	July	5	John W. MacKenzie	2nd Lieut. Tenn. Nat'l Guard	Nashville, Tenn.
35	July	14	J. F. Coburn	Machinist Mate, U.S. Navy	Oceanside, Calif.
36	July	24	Victor E. Bertrandias	1st Lieut. Air Corps	Baltimore, Md.
37	August	8	John I. Moore	1st Lieut. Air Corps	Georgetown, Texas
17	September	16	Charles A. Lindbergh*	Air Mail Pilot	Ottawa, Ill.
38	September	17	C. L. Williams	1st Lieut. Air Corps	Hawaii
17	November	3	Charles A. Lindbergh*	Air Mail Pilot	Covell, Ill.
39	November	12	Charles E. Widmer	Air Mail Pilot	Hollywood Hills, Calif.
40	December	23	Warren D. Williams	Air Mail Pilot	Bowling Green, Ohio
	1927				
41	January	18	Roderic M. Krider	Flying Cadet, Air Corps	Kelly Field, Texas
42	January	18	George T. Shleppy	Flying Cadet, Air Corps	Kelly Field, Texas
43	February	3	Fabian L. Pratt	Captain, Medical Corps	Brooks Field, Texas

*Repeater Jump

No.	Date 1927		Name	Rank	Place of Jump
44	February	3	Lawrence C. Craigie	1st Lieut. Air Corps	Brooks Field, Texas
45	February	15	Carl G. Ashley	Private, Air Corps	Galveston, Texas
46	February	27	Herbert A. Dargue	Major, Air Corps	Buenos Aires, Argentina
47	February	27	Ennis C. Whitehead	1st Lieut. Air Corps	Buenos Aires, Argentina
48	February	28	O.M. Darling	Lieut. U.S. Navy	San Diego, Calif.
49	March	26	E. B. Wilkins	Lieut. U.S. Navy	Augusta, Ga.
50	March	26	G. F. Lawhon	A.M. Mate, U.S. Navy	Augusta, Ga.
51	April	15	Stephen A. McClellan	Lieut. Marine Corps	Bolling Field, D.C.
52	April	27	Stewart W. Towle	1st Lieut. Air Corps	Champaign, Ill.
53	May	4	Hawthorne C. Gray	Captain, Air Corps	Golden Gate, Ill.
54	May	13	George G. Finch	1st Lieut. Air Corps	Edwards, Miss.
55	May	28	Lewis H. Brereton	Major, Air Corps	Reynoldsburgh, Ohio
56	May	28	Bernard A. Bridget	1st Lieut. Air Corps	Reynoldsburgh, Ohio
57	May	28	Clyde M. Taylor	Master Sergeant, Air Corps	Reynoldsburgh, Ohio
58	May	28	Fred P. Miller	Staff Sergeant, Air Corps	Reynoldsburgh, Ohio
59	June	20	Eldo Peterman	1st Lieut. Calif. Nat'l G'rd	Los Angeles, Calif.
60	June	20	H. J. Cooper	Captain, Medical Corps	Los Angeles, Calif.
61	July	10	Art Smertz	Civilian	Ogden, Utah
62	July	13	C. B. Whitney	Lieut. Air Reserve	Salt Lake City, Utah
63	July	13	Paul L. Woodruff	Staff Sergeant, Air Corps	Salt Lake City, Utah
64	July	13	Benjamin W. Craycraft	Civilian, ROTC Unit	Chanute Field, Ill.
65	August	15	Robert Seger	Civilian	Morton Grove, Ill.
66	August	18	Robert G. Fry	Sergeant, Marine Corps	Camp McMurray, China
67	August	23	John E. Heywang	Civilian	Lake Sebasticook, Maine
68	September	16	Valentine Gephart	Civilian	Grampion, Pa.
69	September	25	Fritz H. Grifno	Technical Sergeant, A.C.	Genoa, Texas
70	October	5	A.H. Gilkeson	Major, Air Corps	Edgewood Arsenal, Md.
71	October	23	Charles R. Bowman	Civilian	Tehachapi Mts., Calif.
72	October	25	Frank C. Sutton	Lieut. U.S. Navy	San Diego, Calif.
73	October	27	J. D. Cleveland	Flying Cadet, Air Corps	Kelly Field, Texas
74	October	27	E. A. Sanborn	Flying Cadet, Air Corps	Kelly Field, Texas
75	November	9	Donald H. Stuart	Lieut. Air Reserve	Norfolk, Va.
58	November	9	Fred P. Miller*	Sergeant, Air Corps	Norfolk, Va.
76	November	9	Arvin B. Jewell	Sergeant, Air Corps	Norfolk, Va.
77	November		Ernest E. Dryer	Civilian	New Mexico
78	December	12	George W. Hansen	Flying Cadet, Air Corps	Brooks Field, Texas
79	December	25	James Rutledge	Air Mail Pilot	San Francisco, Calif.
	1928				
80	January	22	Gene Althoff	Civilian Observer	Wright Field, Ohio
81	January	24	Amberse Banks	Air Mail Pilot	Willow Grove, Pa.
82	February	14	Louis M. Bourne	Major, Marine Corps	Reidsville, Va.
77	February	23	Ernest E. Dryer*	Civilian	Ypsilanti, Mich.
83	March	24	Walter C. Green	Lieut. U.S.Naval Reserve	Squantum, Mass.
84	March	24	Samuel G. Colwell	Lieut. U.S.Naval Reserve	Squantum, Mass.
85	March	27	J. M. Carson	Ensign, U.S. Navy	Pensacola, Fla.
79	March	27	James Rutledge	Air Mail Pilot	Orindo, Calif.
86	April	6	Barnett T. Talbott	Lieut. U.S. Navy	Washington, D.C.
87	April	22	James T. Moore	Captain, Marine Corps	Camp McMurray, China
88	April	23	Douglas M. Swisher	Flying Cadet, Air Corps	Kelly Field, Texas
89	April	26	Lawrence J. Carr	1st Lieut. Air Corps	Clark Field, P.I.
90	May	5	Stanley M. Umstead	1st Lieut. Air Corps	Mitchel Field, N.Y.
91	May	27	Al Wilson	Civilian	Hollywood Hills, Calif.
92	May	31	Carl K. Wollam	Civilian	Westmoreland City, Ohio
93	June	8	Maxwell Balfour	1st Lieut. Air Corps	Mitchel Field, N.Y.
94	June	8	John H. McCormick	1st Lieut. Signal Corps	Mitchel Field, N.Y.
95	June	18	Wm. H. Shephard	Flying Cadet, Air Corps	San Juan Canyon, Calif.
96	June	26	Lemuel T. Cleaves	Ensign, U.S. Naval Reserve	Vallejo, Calif.
97	July	1	William L. Campbell	Captain, Air Reserve	Kansas City, Mo.
98	July	4	Ralph C. Wensinger	Civilian	Chippewa Lake, Ohio
99	July	19	E. C. Ewen	Lieut. U.S. Navy	Pensacola, Fla.
100	August	3	William J. Crosswell	Flying Cadet, Air Corps	Kelly Field, Texas
101	August	9	Byron E. Gates	1st Lieut. Air Corps	Elkins, West Virginia
102	August	13	Raymond L. Winn	Flying Cadet, Air Corps	Nuevo, Calif.
103	August	17	George E.K. MacKinsey	Civilian	Bristol, Pa.
104	September	14	Jewell S. Wilson	Private, Air Corps	Fresno, Texas
105	September	14	H. W. Pennington	2nd Lieut. Air Corps	Fresno, Texas
106	September	14	Sheldon B. Yoder	Flying Cadet, Air Corps	Castroville, Texas
107	September	25	Roger V. Williams	2nd Lieut. Air Corps	Rockwell Field, Calif

*Repeater Jump

To be continued

DEATH OF LIEUT. COL. GEO.E.A. REINBURG, RETIRED

The death in a far-off land of Lieut. Colonel George E.A. REINBURG, U.S.Army, Retired, removed another name from the roster of the "Early Birds" of aviation. Colonel Reinburg's death on December 6th occurred at Hangchow, China, where he was chief instructor at the Chinese Aviation School.

A native of the District of Columbia, Col. Reinburg was born on September 25th, 1888.

Commissioned a 2nd Lieutenant of Cavalry in April, 1912, Col. Reinburg served as commanding officer of Troop L, 9th Cavalry; Assistant Regimental Adjutant and also Squadron Quartermaster. He served in New Mexico and Arizona with the 9th Cavalry until October, 1915, when he was transferred to the 7th Cavalry.

In November, 1915, he was attached to the Aviation Section, Signal Corps, as an aviation student and, upon the completion of the course of instruction, received the rating of Junior Military Aviator. Ordered in August, 1916, to duty with the 1st Aero Squadron at Columbus, New Mexico, he served with this organization as a member of the Punitive Expedition into Mexico under General Pershing, his duties being Officer in Charge of Flying.

Upon returning to the United States territory he was stationed at San Antonio, where he received advanced flying training; served as Supply Officer of the 4th Aero Squadron and later organized and commanded the 9th Aero Squadron.

The exigencies of the war emergency led to Col. Reinburg being shifted from place to place where his ability and experience were most needed. For a brief time he served as Officer in Charge of Flying at Mt. Clemens, Mich.; then he commanded the Signal Corps Aviation School at Scott Field, Belleville, Ill.; then the Flying School at Park Field, Tenn.; following which he attended and was graduated as Aerial Gunnery Pilot from the Aerial Gunnery School at Taliaferro Field, Fort Worth, Texas. He commanded this School until July, 1918, when he was ordered to duty overseas.

After completing advanced flying training at the 3rd Aviation Instruction Center, and graduating from the Aerial Gunnery School at St. Jean de Monts, he served as a pilot with the 2nd Pursuit Group. In October, 1918, he was assigned as Commanding Officer of the 2nd Day Bombardment Group. Upon the demobilization of this Group in April, 1919, Col. Reinburg returned to the United States, and after serving for several weeks in the Office of the Director of Air Service, Washington, D.C., he was assigned to duty, August 1, 1919, as Commanding Officer of the Air Service Depot at Fairfield, Ohio.

In September, 1921, Col. Reinburg was assigned to duty in the Supply Group, Office of the Chief of Air Service. In July, 1922, he was assigned to command Bolling Field, D.C., and in May of the following year he was transferred to duty in the Philippines where he served as Air Officer of the Philippine Department. Upon the expiration of his two years of service in the Islands, he was assigned to duty at Chanute Field, Rantoul, Ill., as Executive Officer. In October, 1926, he was assigned to duty as Air Officer of the 7th Corps Area at Omaha, Neb., which duty he performed until July, 1927, when he was assigned to duty as Assistant Military Attache, American Embassy, Berlin, Germany. This duty terminated in June, 1931, and he was assigned to Maxwell Field, Montgomery, Ala. Failing health necessitated the retirement of Col. Reinburg in April, 1932.

Colonel Reinburg was repeatedly commended by his superior officers for his efficiency.

The sincere sympathy of the Air Corps is extended to his bereaved family.

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Model Airplane Flies 4 Miles

(Continued from Page 20)

Hewgley's experience in building models previously, he said, had given him a knack in getting the right balance, which in more technical terms might be aerodynamics. Due to the success of his first venture in power modeling, Hewgley said he was planning on building another plane, to be controlled by radio. He has enlisted the aid of his hangar chief, Staff Sergeant John Lewellyn, who is in charge of Hangar No. 12 of the 12th Air Base Squadron. With the aid of Sergeant Lewellyn and other radio experts, Hewgley hopes to develop a power model plane that can be controlled from the ground.

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22ND PHOTO SECTION MAPS SAN ANTONIO AREA

The 22nd Photo Section, commanded by 1st Lieut. Charles F. Densford, is working on an extensive photographic mapping project for the Commanding General of the Air Corps Training Center.

This map, to be laid as one complete mosaic, will include Kelly Field, Brooks Field, San Antonio, Randolph Field, and New Braunfels, Texas, and all points between. It is estimated that more than 700 exposures will be made. The area covered will be approximately 500 square miles.

The mosaic, when laid, will be about twenty feet long and ten feet wide. It is to be laid in two sections, then each section reduced by half, and the two reductions fitted again into a composite. The laying of the mosaic is being supervised by Staff Sergeant Charles H. Coy.

A special oxygen tank was installed in the O-25A airplane for use of both pilot and observer, since the mission is being conducted at 15,000 feet. First Lieut. Densford and Staff Sergeant Herman L. Chestnutt, photographer, have already flown seven hours on the project. Bad weather has held back the progress, but the job is now about 70% complete.

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Captain Robert M. Montague, Field Artillery, from Fort Sill, Okla., recently delivered a lecture to the students of the present class at the Advanced Flying School, Kelly Field, Texas, on the subject of "Air Corps Cooperation with Field Artillery." This subject is the heaviest one in the curriculum of the school and consists of 24 hours, taught by Captain R.E. Randall.

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